NORTEL

Nortel Ethernet Routing Switch 8600

Commissioning

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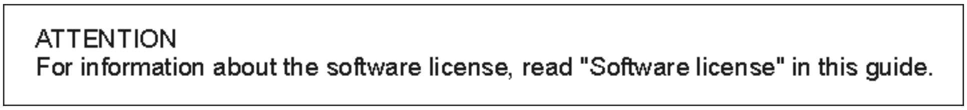

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Contents

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New in this release

The following sections detail what’s new in *Nortel Routing Switch 8600 Commissioning, NN46205-319* for Release 5.0:

- “Features” (page 11)
- “Other changes” (page 11)

Features

See the following sections for information about feature changes.

- “NNCLI” (page 11)

NNCLI

In Release 5.0, you can use the new Nortel Command Line Interface (NNCLI) to configure the switch. For more information about the NNCLI, see the following sections:

- “Initial steps using the NNCLI” (page 69)
- “Remote connection configuration using the NNCLI” (page 113)
- “Common procedures using the NNCLI” (page 131)

Other changes

See the following sections for information about changes that are not feature-related.

- “Document changes” (page 11)

Document changes

Much of the content in this document is previously released as *Getting Started, 313189-F*. All document titles in the Nortel Ethernet Routing Switch 8600 suite are changed. For more information, see *Nortel Ethernet Routing Switch 8600 Documentation Roadmap, NN46205-103*.

This document is restructured to align with Nortel Customer Documentation Standards (NCDS).

Introduction

This guide provides procedures to commission the Nortel Ethernet Routing Switch 8600.

Navigation

Commissioning fundamentals

Commissioning follows hardware installation. Commissioning includes the minimal, but essential, configuration steps to provide a default, starting point configuration, set up a management interface, and establish basic security on the node. For more information about configuring security, see *Nortel Ethernet Routing Switch 8600 Security, NN46205-601*.

Navigation

System connections

Connect to the Switch Fabric/Central Processor Unit (SF/CPU) serial ports using one of the following connections:

- “Terminal connection” (page 16)
- “Modem connection” (page 16)

Terminal connection

Connect the serial console interface (an RS-232 port) to a PC or terminal to monitor and configure the switch. The port uses a DB-9 connector that operates as data terminal equipment (DTE) or data communication equipment (DCE). The default communication protocol settings for the console port are:

- 9600 baud
- 8 data bits
- 1 stop bit
- No parity

To use the console port, you need the following equipment:

- A terminal or teletypewriter (TTY)-compatible terminal, or a portable computer with a serial port and terminal-emulation software
- An Underwriters Laboratories (UL)-listed straight-through or null modem RS-232 cable with a female DB-9 connector for the console port on the switch. The other end of the cable must use a connector appropriate to the serial port on your computer or terminal. Most computers or terminals use a male DB-25 connector. You can find a null modem cable with the chassis.

You must shield the cable connected to the console port to comply with emissions regulations and requirements.

Modem connection

You can access the switch through a modem connection to the Nortel Ethernet Routing Switch 8600, 8691SF/CPU, or 8692SF/CPU modules. Nortel recommends that you use the default settings for the modem port for most modem installations.

To set up modem access, you must use a DTE-to-DCE cable (straight or transmit cable) to connect the Nortel Ethernet Routing Switch 8600 to the modem. The following table shows the DTE-to-DCE pin assignments.

Table 1
DTE-to-DCE straight-through pin assignments

Signal	Switch	Modem	
	Pin number	**DCE DB-9 pin number**	**DCE DB-25 pin number**
Received data (RXD)	2	2	3
Transmitted data (TXD)	3	3	2

Table 1
DTE-to-DCE straight-through pin assignments (cont'd.)

Signal	Switch	Modem	
	Pin number	**DCE DB-9 pin number**	**DCE DB-25 pin number**
Data terminal ready (DTR)	4	4	20
Ground (GND)	5	5	7
Data set ready (DSR)	6	6	6
Request to send (RTS)	7	7	4
Clear to send (CTS)	8	8	5

The default communication protocol settings for the modem port are:

- 9600 baud
- 8 data bits
- 1 stop bit
- No parity

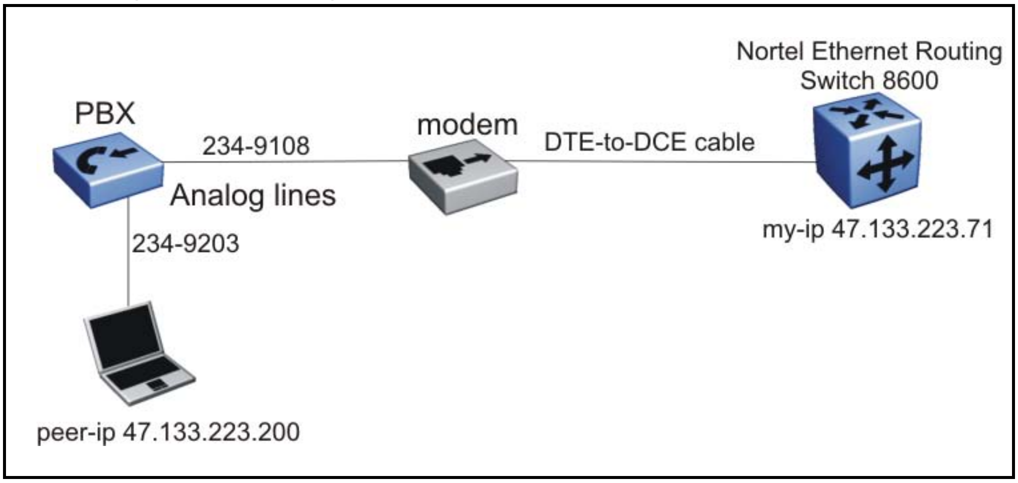
Because the modem port receives DSR and CTS signals before transmitting, control lines are required in the cables. The modem port supports no inbound flow control. The port does not turn on and turn off control lines to indicate the input buffer is full.

To connect a modem to a Nortel Ethernet Routing Switch 8600, you can configure the modem port first using another type of connection to the command line interface (CLI) or Nortel Command Line Interface (NNCLI).

PPP modem connection

You can establish a PPP (Point-to-Point Protocol) link over serial asynchronous lines. PC clients use this link to connect remotely to a switch through a standard dial-up modem and the modem DTE port on the primary switch SF/CPU. You must configure the connection on both the remote client PC and the switch. The following figure shows a standard PPP connection to the Nortel Ethernet Routing Switch 8600.

Figure 1
PPP configuration topology



When you configure the modem port on the switch to use PPP, you must also specify a PPP file. The PPP file is a text document which includes all additional PPP configuration parameters to include when the switch reboots. Enter one configuration parameter on each line with any required values.

You can configure the connection to use the Challenge-Handshake Authentication Protocol (CHAP) or the Password Authentication Protocol (PAP). Both protocols require a secrets file. The secrets file is a text document which includes the list of all users authorized to use the modem port. You must list one user on each line and include specific parameters. The format for each user is **`client server password IP address`**. The following list explains each option.

- client: the name of the user. This value is the logon name of the authorized user. This value should be the name or ID of the user, similar to a Windows or UNIX logon.
- server: the name of the remote device, which is often the dial-in server. Use an asterisk (*) to indicate any server name is acceptable.
- password: the password for the user.
- IP address: the IP address associated with the user.

The value for the IP address depends on the desired configuration of the modem. If all users must use the same IP address, you must specify the same IP address for all users in the file and it must be the same IP address that you configure as the peer-ip for the modem port. Configure the IP settings on the client to obtain an IP address automatically.

If each user must use a different IP address, list each user with a different IP address in the file. Configure the client IP settings to use a static IP address that matches what you configure in the secrets file.

An example secrets file looks like the following:

```
long * long 47.133.223.200
william * william 47.133.223.200
```

System logon

After the switch boot sequence is complete, a Login prompt appears. The following table shows the default values for logon and password for the console and Telnet sessions.

Table 2
Access levels and default logon values

Access level	Description	Default logon	Default password
Read-only	Permits view-only configuration and status information. Is equivalent to Simple Network Management Protocol (SNMP) read-only community access.	ro	ro
Layer 1 read/write	View most switch configuration and status information and change physical port settings.	l1	l1
Layer 2 read/write	View and change configuration and status information for Layer 2 (bridging and switching) functions.	l2	l2
Layer 3 read/write (8600 switches only)	View and change configuration and status information for Layer 2 and Layer 3 (routing) functions.	l3	l3
Read/write	View and change configuration and status information across the switch. You cannot change security and password settings. This access level is equivalent to SNMP read/write community access.	rw	rw
Read/write/all	Permits all the rights of Read/Write access and the ability to change security settings, including the CLI and Web-based management user names and passwords and the SNMP community strings.	rwa	rwa

hsecure mode

The Nortel Ethernet Routing Switch 8600 supports a flag called high secure (hsecure). hsecure introduces the following behaviors for the password: 10-character enforcement, aging time, limitation of failed logon attempts, and a protection mechanism to filter certain IP addresses.

After you enable the hsecure flag, the software enforces the 10-character rule for all passwords. After you upgrade from a previous release, if the password does not contain at least 10 characters, you must change your password to the mandatory character length. This password must contain a minimum of two uppercase characters, two lowercase characters, two numbers, and two special characters.

Default passwords and community strings

If the switch boots in hsecure mode as a default factory setting, and you have not configured a password, the default passwords are changed to respect this rule. The following table describes the default passwords.

Table 3
Default setting passwords

User ID	Default password
rwa	rwarwarwar
rw	rwrwrwrwrw
ro	rororororo
l3	l3l3l3l3l3
l2	l2l2l2l2l2
l1	l1l1l1l1l1
l4admin	l4adminl4a
slbadmin	slbadminsl
oper	operoperop
l4oper	l4operl4op
slboper	slboperslb
ssladmin	ssladminss

The following table describes the default community strings.

Table 4
Default community strings

User ID	New community string
ro	`publiconly`
l1	`privateonly`
l2	`privateonly`

Table 4
Default community strings (cont'd.)

User ID	New community string
l3	`privateonly`
rw	`privateonly`
rwa	`secretonly`

Aging enforcement

When you enable the hsecure flag, you can configure a duration after which you must change your password. You configure the duration by using the aging parameter.

For SNMP and FTP, after a password expires, access is denied. Before you access the system, you must change a community string to a new string consisting of more than eight characters.

Consider the following after you enable the hsecure flag:

- You cannot enable the Web server.
- You cannot enable the SSH password authentication.

Filtering mechanism

Beginning with Release 4.1, incorrect IP source addresses as network or broadcast addresses are filtered at the virtual router interface. For example, V1 has the network address 192.168.168.0/24.

This change is valid for all IP subnets, not only for /24 as mentioned in the example. Source addresses 192.168.168.0 and 192.168.168.255 are discarded.

You can filter addresses only if you enable the hsecure mode.

Setup utility

To optimize the function of the Nortel Ethernet Routing Switch 8600, you can obtain a list of hardware modules. Because the latest modules provide advanced features, they work in certain operation modes that previous modules do not support. The setup utility monitors system requirements and obtains the highest system performance.

Use the setup utility to configure your switch by responding to a series of on-screen questions. The setup utility saves the information in the boot and run-time configuration files. The saved information and files ensure the switch reboots in the desired operating mode. The setup utility also provides error and warning messages to advise you of the ramifications of certain hardware and software configurations.

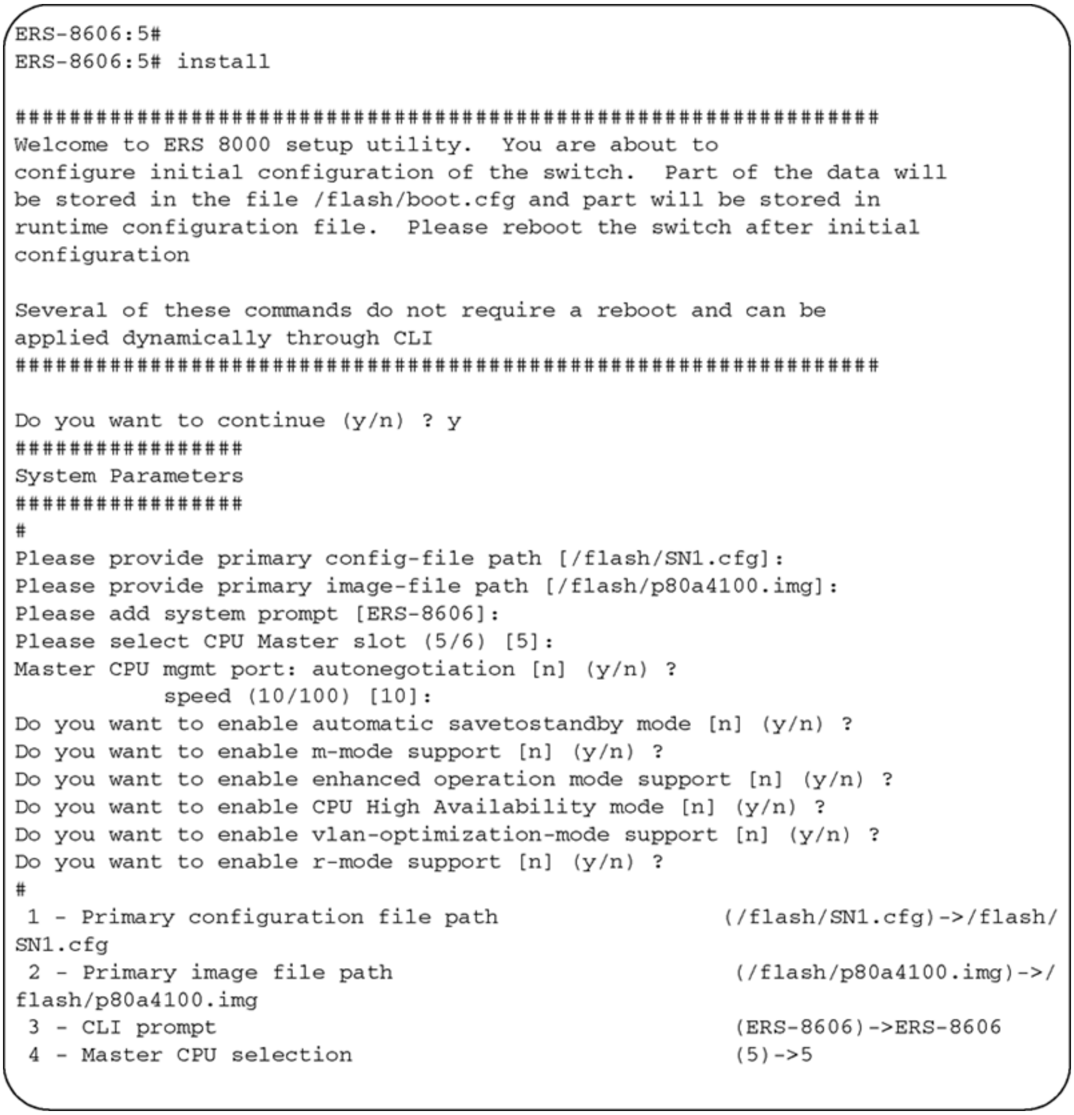
For information about the supported operating modes, see *Nortel Ethernet Routing Switch 8600 Administration, NN46205-605*.

The setup utility prompts you through the configuration process by asking a series of questions. Answer each question or accept the default by pressing **Enter**. Each question shows the default in brackets ([ ]) and the acceptable parameter options in parenthesis.

After you run the setup utility, reboot the switch.

The following figures show sample output from the setup utility. This example uses the default values.

Figure 2
Setup utility example one



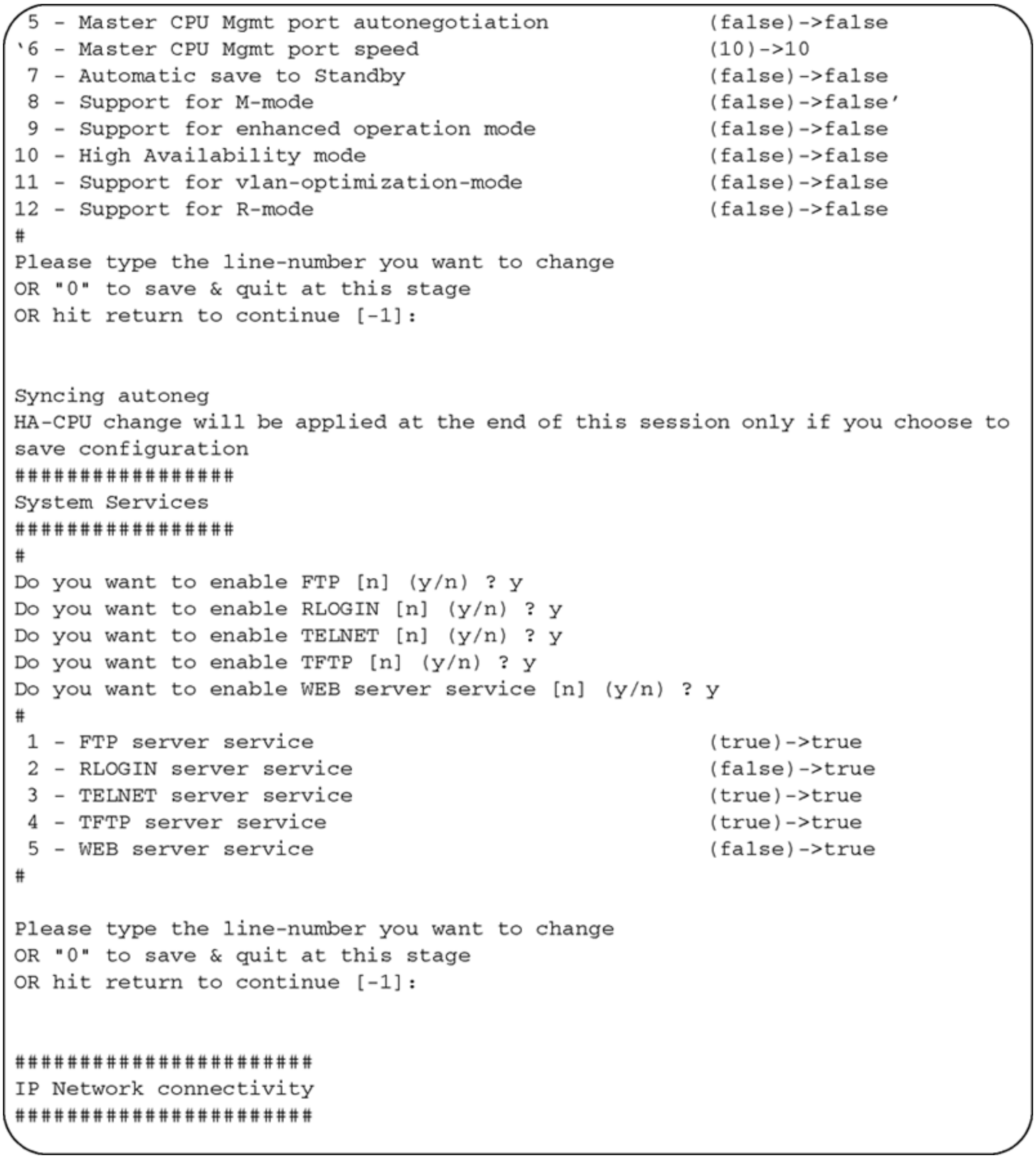
```
ERS-8606:5#
ERS-8606:5# install

################################################################
Welcome to ERS 8000 setup utility.  You are about to
configure initial configuration of the switch.  Part of the data will
be stored in the file /flash/boot.cfg and part will be stored in
runtime configuration file.  Please reboot the switch after initial
configuration

Several of these commands do not require a reboot and can be
applied dynamically through CLI
################################################################

Do you want to continue (y/n) ? y
#################
System Parameters
#################
#
Please provide primary config-file path [/flash/SN1.cfg]:
Please provide primary image-file path [/flash/p80a4100.img]:
Please add system prompt [ERS-8606]:
Please select CPU Master slot (5/6) [5]:
Master CPU mgmt port: autonegotiation [n] (y/n) ?
           speed (10/100) [10]:
Do you want to enable automatic savetostandby mode [n] (y/n) ?
Do you want to enable m-mode support [n] (y/n) ?
Do you want to enable enhanced operation mode support [n] (y/n) ?
Do you want to enable CPU High Availability mode [n] (y/n) ?
Do you want to enable vlan-optimization-mode support [n] (y/n) ?
Do you want to enable r-mode support [n] (y/n) ?
#
 1 - Primary configuration file path                (/flash/SN1.cfg)->/flash/
SN1.cfg
 2 - Primary image file path                         (/flash/p80a4100.img)->/
flash/p80a4100.img
 3 - CLI prompt                                      (ERS-8606)->ERS-8606
 4 - Master CPU selection                            (5)->5
```

Figure 3
Setup utility example two



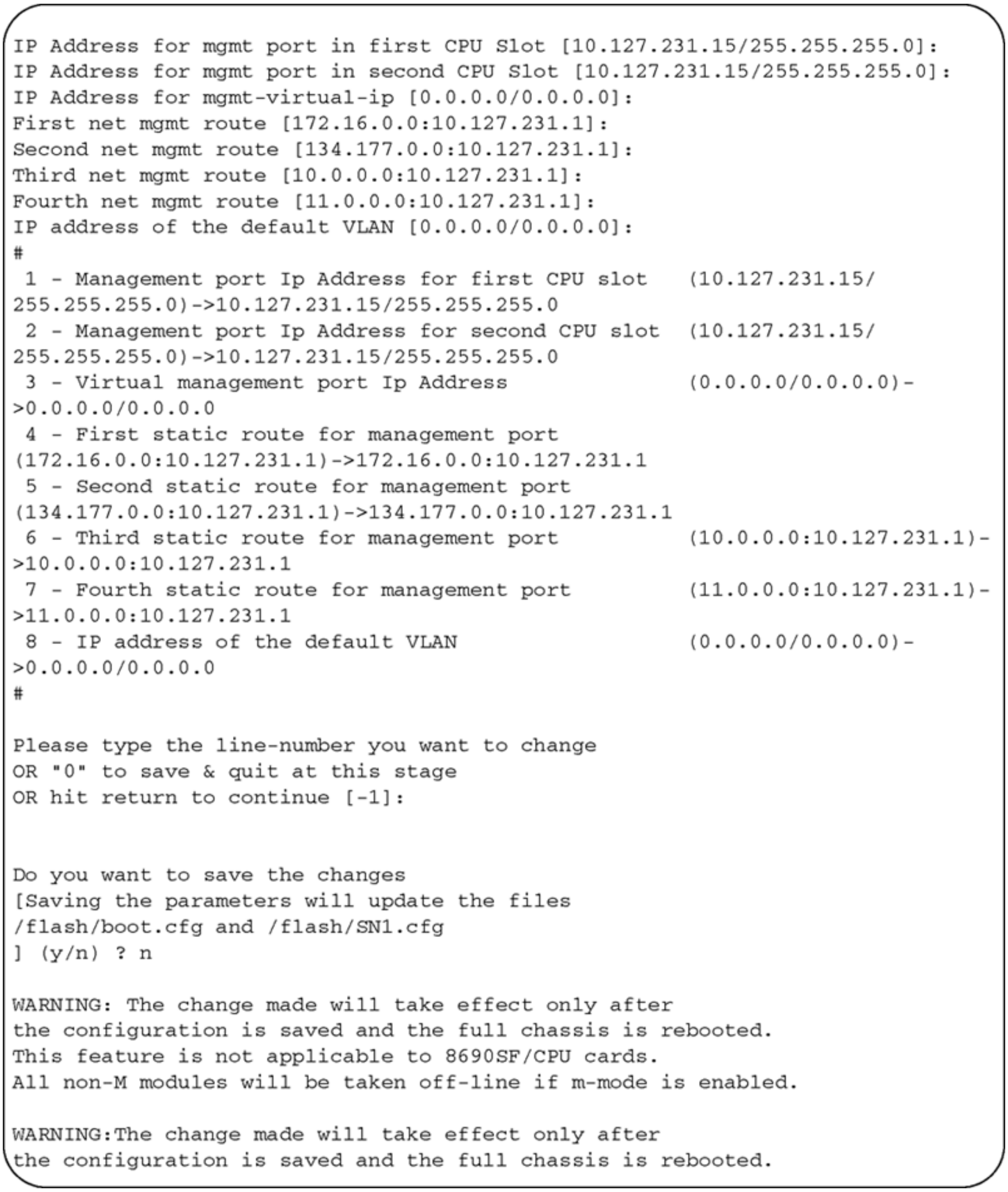
```
 5 - Master CPU Mgmt port autonegotiation            (false)->false
‘6 - Master CPU Mgmt port speed                      (10)->10
 7 - Automatic save to Standby                       (false)->false
 8 - Support for M-mode                                (false)->false’
 9 - Support for enhanced operation mode               (false)->false
10 - High Availability mode                          (false)->false
11 - Support for vlan-optimization-mode              (false)->false
12 - Support for R-mode                              (false)->false
#
Please type the line-number you want to change
OR "0" to save & quit at this stage
OR hit return to continue [-1]:


Syncing autoneg
HA-CPU change will be applied at the end of this session only if you choose to
save configuration
#################
System Services
#################
#
Do you want to enable FTP [n] (y/n) ? y
Do you want to enable RLOGIN [n] (y/n) ? y
Do you want to enable TELNET [n] (y/n) ? y
Do you want to enable TFTP [n] (y/n) ? y
Do you want to enable WEB server service [n] (y/n) ? y
#
 1 - FTP server service                              (true)->true
 2 - RLOGIN server service                           (false)->true
 3 - TELNET server service                           (true)->true
 4 - TFTP server service                             (true)->true
 5 - WEB server service                              (false)->true
#

Please type the line-number you want to change
OR "0" to save & quit at this stage
OR hit return to continue [-1]:


#######################
IP Network connectivity
#######################
```

Figure 4
Setup utility example three



```
IP Address for mgmt port in first CPU Slot [10.127.231.15/255.255.255.0]:
IP Address for mgmt port in second CPU Slot [10.127.231.15/255.255.255.0]:
IP Address for mgmt-virtual-ip [0.0.0.0/0.0.0.0]:
First net mgmt route [172.16.0.0:10.127.231.1]:
Second net mgmt route [134.177.0.0:10.127.231.1]:
Third net mgmt route [10.0.0.0:10.127.231.1]:
Fourth net mgmt route [11.0.0.0:10.127.231.1]:
IP address of the default VLAN [0.0.0.0/0.0.0.0]:
#
 1 - Management port Ip Address for first CPU slot   (10.127.231.15/
255.255.255.0)->10.127.231.15/255.255.255.0
 2 - Management port Ip Address for second CPU slot  (10.127.231.15/
255.255.255.0)->10.127.231.15/255.255.255.0
 3 - Virtual management port Ip Address              (0.0.0.0/0.0.0.0)-
>0.0.0.0/0.0.0.0
 4 - First static route for management port
(172.16.0.0:10.127.231.1)->172.16.0.0:10.127.231.1
 5 - Second static route for management port
(134.177.0.0:10.127.231.1)->134.177.0.0:10.127.231.1
 6 - Third static route for management port          (10.0.0.0:10.127.231.1)-
>10.0.0.0:10.127.231.1
 7 - Fourth static route for management port         (11.0.0.0:10.127.231.1)-
>11.0.0.0:10.127.231.1
 8 - IP address of the default VLAN                  (0.0.0.0/0.0.0.0)-
>0.0.0.0/0.0.0.0
#

Please type the line-number you want to change
OR "0" to save & quit at this stage
OR hit return to continue [-1]:


Do you want to save the changes
[Saving the parameters will update the files
/flash/boot.cfg and /flash/SN1.cfg
] (y/n) ? n

WARNING: The change made will take effect only after
the configuration is saved and the full chassis is rebooted.
This feature is not applicable to 8690SF/CPU cards.
All non-M modules will be taken off-line if m-mode is enabled.

WARNING:The change made will take effect only after
the configuration is saved and the full chassis is rebooted.
```

Secure and nonsecure protocols

The following table describes the secure and nonsecure protocols the Nortel Ethernet Routing Switch 8600 supports.

Table 5
Secure and nonsecure protocols for IPv4

Nonsecure protocols	Default status	Equivalent secure protocols	Default status
FTP and TFTP	Disabled	SCP	Disabled
Telnet	Disabled	Secure SHell (SSH) v1, v2 Nortel recommends that you use SSHv2 instead of SSHv1.	Disabled
SNMPv1, SNMPv2	Enabled	SNMPv3 You must load the DES/AES image on the switch to use SNMPv3.	Enabled
Rlogin	Disabled	Secure SHell (SSH) v1, v2	Disabled
HTTP	Disabled	No equivalent **ATTENTION** Nortel recommends that you do not use this protocol due to the risk to the security of your network.	

Password encryption

Beginning in Release 4.1, the switch stores passwords in encrypted format and no longer in the configuration file.

ATTENTION

If you load a configuration file saved prior to Release 3.7.6, saved passwords from the configuration file are not recognized. If you boot the switch for the first time with the software Release 3.7.6 or higher image, the switch resets the password to default values and generates a log, which indicates the changes.

For security reasons, Nortel recommends that you configure the passwords to values other than the factory defaults.

Management port

You must assign an IP address to the management port before you can use it for out-of-band (OOB) management. In a switch with redundant 8691or 8692 modules, each management port uses a specific IP address. In addition, you can create a virtual management port with an IP address available to the master management module.

The master management module replies to all management requests sent to the virtual IP address, and to requests sent to the management port IP address. If the master management module fails and the backup management module takes over, the virtual management port IP address continues to provide management access to the switch.

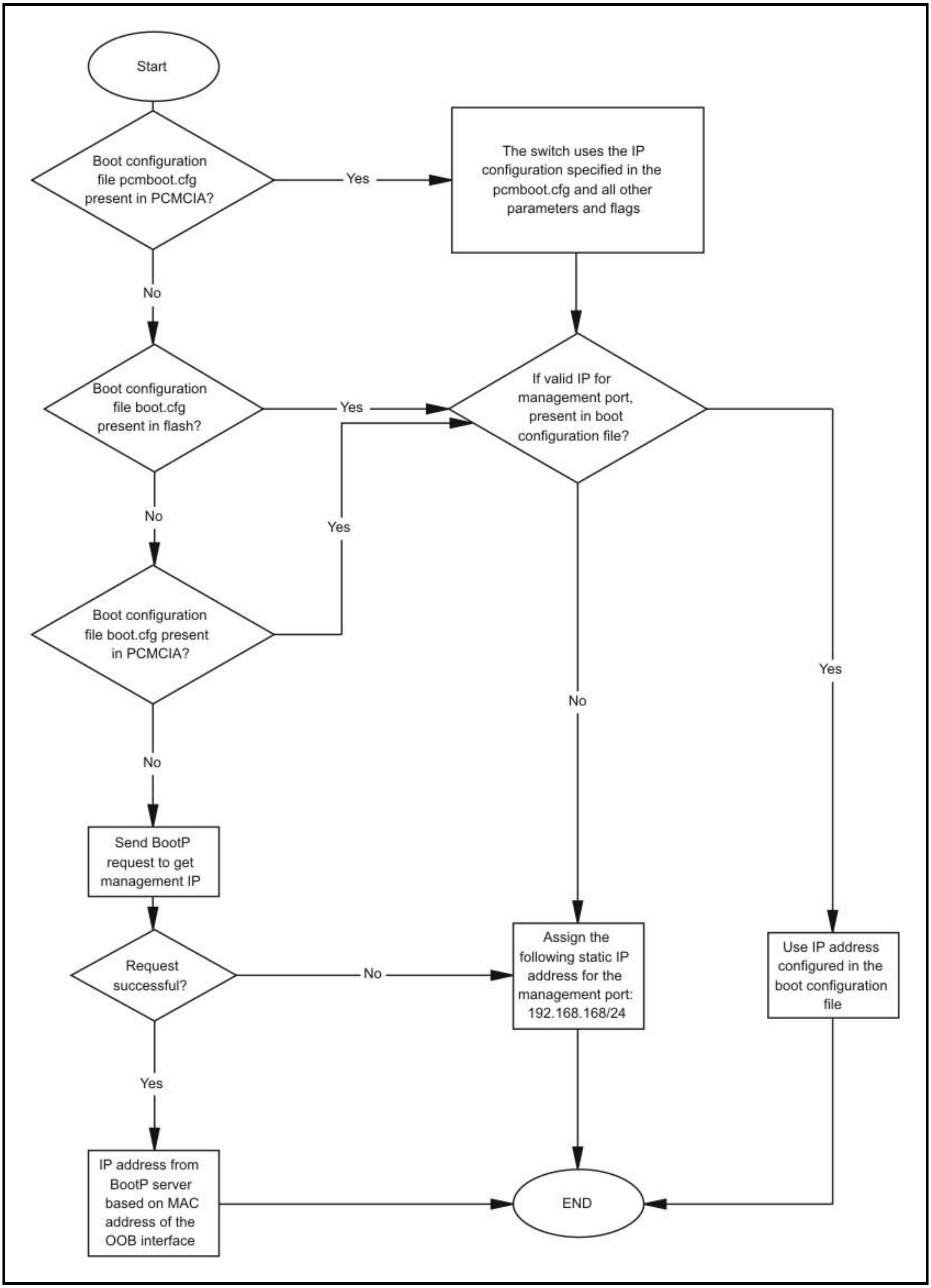
The following lists provides configuration considerations.

- You can configure the standby IP to a subnet other than that of the master IP using Device Manager only. Attempts to do so using CLI or NNCLI will generate a warning message.
- If you use Device Manager, you can configure the standby IP to a different subnet than the master IP, and you do not receive a warning message.

Static IP entry for the OOB network management interface

The following figure shows the OOB network management port default IP assignment.

Figure 5
OOB network management port default IP flowchart


Start
Boot configuration file pcmboot.cfg present in PCMCIA?
Yes
The switch uses the IP configuration specified in the pcmboot.cfg and all other parameters and flags
No
Boot configuration file boot.cfg present in flash?
Yes
If valid IP for management port, present in boot configuration file?
No
Yes
Boot configuration file boot.cfg present in PCMCIA?
Yes
No
No
Send BootP request to get management IP
Request successful?
No
Assign the following static IP address for the management port: 192.168.168/24
Use IP address configured in the boot configuration file
Yes
IP address from BootP server based on MAC address of the OOB interface
END

The switch first checks for the file pcmboot.cfg, in Personal Computer Memory Card International Association (PCMCIA). If not found, the switch checks for the file boot.cfg in flash.

ATTENTION
If you use the boot configuration file from PCMCIA, you must rename the file to pcmboot.cfg The boot.cfg file is no longer saved in PCMCIA. The file is saved only in flash.

Web management

The Nortel Ethernet Routing Switch 8600 includes a Web management interface you can use to monitor your switch through a Web browser from anywhere on your network. The Web interface supports many of the same monitoring features as the Device Manager software.

For information about configuration requirements and instructions to install the help files, to enable the Web server using Device Manager, and to access the Web interface, see *Nortel Ethernet Routing Switch 8600 User Interface Fundamentals, NN46205-308*.

Device Manager

Device Manager is an SNMP-based graphical user interface (GUI) tool designed to manage single devices. To use Device Manager, you must connect to a management station running Device Manager in one of the supported environments.

For information about Device Manager installation and startup, see *Nortel Ethernet Routing Switch 8600 User Interface Fundamentals, NN46205-308*.

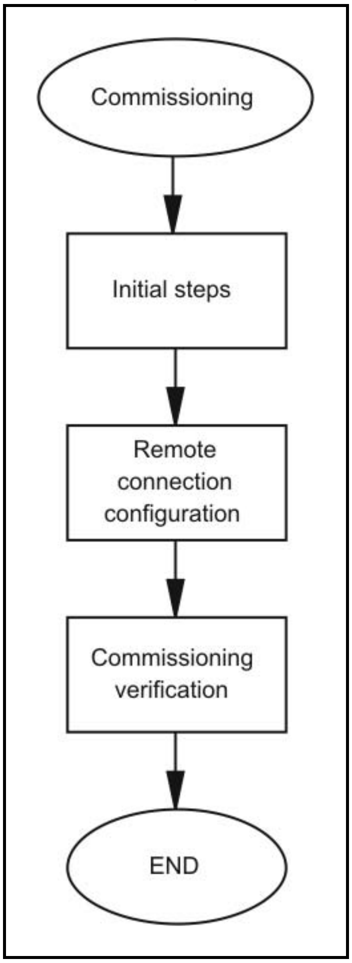
Commissioning

Commissioning follows hardware installation. The commissioning task includes all the initial procedures you must use to bring the Ethernet Routing Switch 8600 online and set up appropriate access for remote users.

Commissioning tasks

The following work flow shows the sequence of tasks you perform to commission the Nortel Ethernet Routing Switch 8600. To link to a task, go to "Commissioning navigation" (page 32).

Figure 6
Commissioning tasks



Commissioning navigation

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Initial steps using Device Manager

The initial commissioning steps involve basic setting configuration.

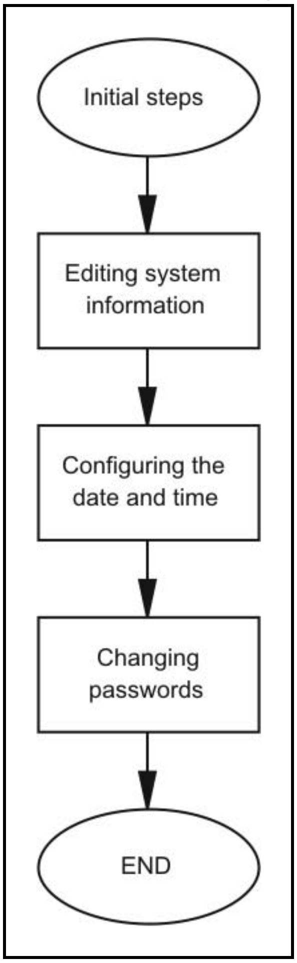
Prerequisites to initial steps

- You must install the hardware.
- You must install at least one cable to set up a remote connection to the switch.
- You must power up the switch.

Initial commissioning procedures

The following task flow shows the sequence of procedures you perform for the initial commissioning steps. To link to a procedure, click the procedure title in “Initial commissioning navigation” (page 34).

Figure 7
Initial commissioning procedures



Initial commissioning navigation

- "Editing system information" (page 34)
- "Configuring the date and time" (page 37)
- "Changing passwords" (page 38)

Editing system information

You can edit system information, such as the contact person, the name of the device, and the location.

Procedure steps

Step	Action
1	On the Device Manager menu bar, choose **Edit**, **Chassis**.

The Chassis dialog box appears with the System tab displayed.

2 Type the contact information.

3 Type the system name.

4 Type the location information.

5 Click **Apply**.

6 Click **Close**.

--End--

Variable definitions

Use the data in the following table to configure the System tab.

Variable	Value
sysDescr	Shows the system assigned name and the software version
sysUpTime	Shows the time since the system last started
sysContact	Configures the contact information (in this case, an e-mail address) for the Nortel support group
sysName	Configures the name of this device
sysLocation	Configures the physical location of this device
VirtualIpAddr	Configures the virtual IP address that is advertised by the primary SF/CPU and stored in the switch configuration file and not the boot configuration file
VirtualNetMask	Configures the net mask of the virtual management IP address
VirtualIpv6Address	Configures the virtual IPv6 address that is advertised by the primary SF/CPU. and stored in the switch configuration file and not the boot configuration file
VirtualIPv6Prefix Length	Configures the length of the virtual IPv6 prefix entry
DnsDomainName	Configures the default domain for querying the DNS server
LastChange	Displays the time since the last configuration change

Variable	Value
LastVlanChange	Displays the time since the last VLAN change
LastStatisticsReset	Displays the time since the statistics counters were last reset
LastRunTimeConfigSave	Displays the last run-time configuration saved
LastRunTimeConfigSaveToSlave	Displays the last run-time configuration saved to the standby device
LastBootConfigSave	Displays the last boot configuration saved
LastBootConfigSaveOnSlave	Displays the last boot configuration saved on the standby device
DefaultRuntimeConfigFileName	Displays the default Run-time configuration file directory name
DefaultBootConfigFileName	Displays the default boot configuration file directory name
ConfigFileName	Specifies the name of a new configuration file
ActionGroup1	Can be one of the following actions: • resetCounters—resets all statistic counters • checkSwInFlash—checks the software in flash • saveRuntimeConfigToSlave—saves the current run-time configuration to the standby SF/CPU • saveToNVRAM—saves the current run-time configuration to nonvolatile RAM (NVRAM) • checkSwInPcmcia—checks the software in PCMCIA • saveBootConfig—saves the current boot configuration • saveToStandbyNVRAM—saves the current run-time configuration to the standby NVRAM • saveRuntimeConfig—saves the current run-time configuration

Variable	Value
	• saveSlaveBootConfig—saves the current boot configuration to the standby SF/CPU • loadLicense—loads a software license file to enable features
ActionGroup2	Can be one of the following actions: • resetIstStatCounters—resets the IST statistic counters • resetLspStats—resets the LSP statistics
ActionGroup3	flushIpRouteTbl—flushes IP routes from the routing table
ActionGroup4	Can be one of the following actions: • hardReset—resets the device and runs power-on tests. • softReset—resets the device without running power-on tests • cpuSwitchOver—switch control from one SF/CPU to another • resetConsole—reinitializes the hardware UART drivers. Use only if the console or modem connection is hung • resetModem—reinitializes the UART drivers on the modem port. Use only if the console or modem connection is hung
Result	Displays a message after you click Apply

Configuring the date and time

Use the User Set Time tab to configure the date and time.

Procedure steps

Step	Action
1	In the Device Manager window, select the chassis.
2	From the Device Manager menu bar, choose **Edit**, **Chassis**. The Chassis dialog box appears with the System tab displayed.
3	Click **User Set Time**.

The User Set Time tab appears.

4 Type the correct details.

5 Click **Apply**.

--End--

Variable definitions

Use the data in the following table to configure the User Set Time tab.

Variable	Value
Year	Configures the year (integer 1998–2097)
Month	Configures the month (integer 1–12)
Date	Configures the day (integer 1–31)
Hour	Configures the hour (integer 0–23)
Minute	Configures the minute (integer 0–59)
Second	Configures the second (integer 0–59)

Changing passwords

Configure new passwords for each access level, or change the logon or password for the different access levels of the switch. After you receive the Nortel Ethernet Routing Switch 8600, use default passwords to initially access the CLI. If you use Simple Network Management Protocol version 3 (SNMPv3), you can change passwords that are in encrypted format.

Procedure steps

Step **Action**

1 From the Device Manager menu bar, choose **Security**, **Control Path**, **General**.

The Control Path Security dialog box appears with the Port Lock tab visible.

2 Click **CLI**.

The CLI tab appears.

3 Specify the username and password for the appropriate access level.

4 Click **Apply**.

--End--

Variable definitions

Use the data in the following table to configure the CLI tab.

Variable	Value
RWAUserName	Specifies the user name for the read/write/all CLI account.
RWAPassword	Specifies the password for the read/write/all CLI account.
RWEnable	Activates the read/write access level.
RWUserName	Specifies the user name for the read/write CLI account.
RWPassword	Specifies the password for the read/write CLI account.
RWL3Enable	Activates the read/write Layer 3 access level.
RWL3UserName	Specifies the user name for the Layer 3 read/write CLI account.
RWL3Password	Specifies the password for the Layer 3 read/write CLI account.
RWL2Enable	Activates the read/write Layer 2 access level.
RWL2UserName	Specifies the user name for the Layer 2 read/write CLI account.
RWL2Password	Specifies the password for the Layer 2 read/write CLI account.
RWL1Enable	Activates the read/write Layer 1 access level.
RWL1UserName	Specifies the user name for the Layer 1 read/write CLI account.
RWL1Password	Specifies the password for the Layer 1 read/write CLI account.
ROEnable	Activates the read/only CLI account level.
ROUserName	Specifies the user name for the read-only CLI account.
ROPassword	Specifies the password for the read-only CLI account.
MaxTelnetSessions	Indicates the maximum number of concurrent Telnet sessions (0–8).
MaxRloginSessions	Indicates the maximum number of concurrent Rlogin sessions(0–8).

Variable	Value
Timeout	Indicates the number of seconds of inactivity for a Telnet or Rlogin session before automatic timeout and disconnect (30–65535 seconds).
NumAccessViolations	Indicates the number of CLI access violations detected by the system. This field is a read-only field.

Initial steps using the CLI

The initial commissioning steps involve basic configuration settings.

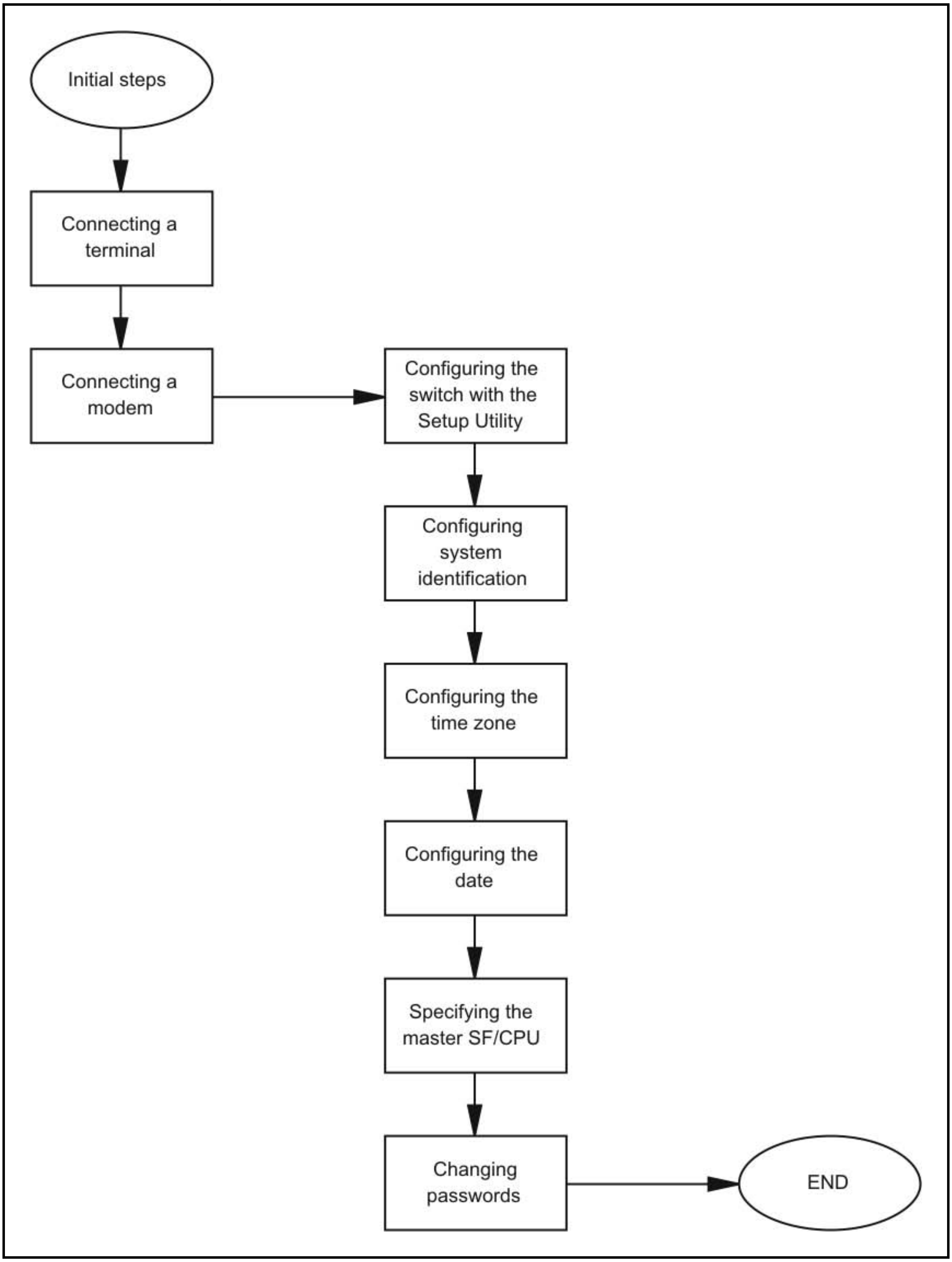
Prerequisites to initial steps

- You must install the hardware.
- You must install at least one cable to set up a remote connection to the switch.
- You must power up the switch.

Initial commissioning procedures

The following task flow shows the sequence of procedures you perform for the initial commissioning steps. To link to a procedure, click the procedure title in "Initial commissioning navigation" (page 43).

Figure 8
Initial commissioning procedures


Initial steps
Connecting a terminal
Connecting a modem
Configuring the switch with the Setup Utility
Configuring system identification
Configuring the time zone
Configuring the date
Specifying the master SF/CPU
Changing passwords
END

Initial commissioning navigation

Job aid: Roadmap of initial CLI commands

The following table lists the commands and the parameters you use to complete the procedures in this section.

Table 6
Job aid: Roadmap of initial CLI commands

Command	Parameter
`config bootconfig master <cpu-slot>`	
`config bootconfig sio modem`	`8databits <true|false>`
	`baud <rate>`
	`enable <true|false>`
	`mode <ascii|slip|ppp>`
	`mtu <bytes>`
	`my-ip <ipaddr>`
	`peer-ip <ipaddr>`
	`pppfile <file>`
	`restart`
	`slip-compression <true|false>`
	`slip-rx-compression <true|false>`

Table 6
Job aid: Roadmap of initial CLI commands (cont'd.)

Command	Parameter
config bootconfig tz	**dst-end <Mm.n.d/hhmm|MMddhhmm>**
	dst-name <dstname>
	dst-offset <minutes>
	dst-start <Mm.n.d/hhmm|MMddhhmm>
	info
	name <tz>
	offset-from-utc <minutes>
config cli password	**access level <access level> <enable|disable>**
	aging <days>
	default-lockout-time <secs>
	info
	l1 <username> [<password>]
	l2 <username> [<password>]
	l3 <username> [<password>]
	l4admin <username>
	l4oper <username>
	lockout-time <HostAddress> <secs>
	min-passwd-len <integer>
	oper <username>
	password-history <number>
	ro <username> [<password>]
	rw <username> [<password>]
	rwa <username> [<password>]
	slboper <username>
	slbadmin <username>
	ssladmin <username>
config setdate <MMddyyyyhhmmss>	

Table 6
Job aid: Roadmap of initial CLI commands (cont'd.)

Command	Parameter
`config sys set`	`contact <contact>`
	`clock-sync-time <minutes>`
	`contact <contact>`
	`ecn-compatibility <enable|disable>`
	`force-topology-ip-flag <true|false>`
	`global-filter <enable|disable>`
	`info`
	`location <location>`
	`max-vlan-resource-reservation <enable|disable>`
	`mgmt-virtual-ip <ipaddr/mask>`
	`mgmt-virtual-ipv6 <ipv6addr/prefix-len>`
	`mroute-stream-limit <enable|disable>`
	`mtu <bytes>`
	`multicast-resource-reservation <value>`
	`name <prompt>`
	`portlock <on|off>`
	`sendAuthenticationTrap <true|false>`
	`smlt-on-single-cp <enable|disable> [timer <value ]`
	`topology <on|off>`
	`udp-checksum <enable|disable>`
	`udpsrc-by-vip <enable|disable>`
	`vlan-bysrcmac <enable|disable>`
	`wsm-direct-mode <enable|disable>`
`install`	`name <prompt>`
`reset-passwd`	`name <prompt>`
`show bootconfig master`	

Connecting a terminal

Connect a terminal to the serial console interface to monitor and configure the switch.

Prerequisites

- To use the console port, you need the following equipment:
  - A terminal or teletypewriter (TTY)-compatible terminal, or a portable computer with a serial port and terminal-emulation software.
  - An Underwriters Laboratories (UL)-listed straight-through or null modem RS-232 cable with a female DB-9 connector for the console port on the switch. The other end of the cable must use a connector appropriate to the serial port on your computer or terminal. Most computers or terminals use a male DB-25 connector. You can find a null modem cable with the chassis.
- You must shield the cable connected to the console port to comply with emissions regulations and requirements.

Procedure steps

Step	Action
1	Configure the terminal protocol as follows: • 9600 baud • 8 data bits • 1 stop bit • No parity
2	Connect the RS-232 cable to the console port.
3	Connect the other end of the RS-232 cable to the terminal or computer serial port.
4	Turn on the terminal.
5	Log on to the CLI.

--End--

Connecting a modem

Connect a modem to a Nortel Ethernet Routing Switch 8600 to establish a connection with the switch. You can configure the modem port first using another type of connection, such as a terminal connection, to the CLI.

Prerequisites

- You need a DTE-to-DCE cable (straight or transmit cable) to connect the Nortel Ethernet Routing Switch 8600 to the modem.
- You must configure your client dial-up settings to establish the connection to the modem.

Procedure steps

Step **Action**

1 In the run-time CLI, configure the modem port by using the following command:

```
config bootconfig sio modem
```

Now you can enter options for this command level without retyping the first part of the command.

> **ATTENTION**
> Nortel recommends that before you configure the Serial Line Internet Protocol (SLIP) or Point-to-Point Protocol (PPP), you familiarize yourself with these protocols.

2 Configure port parameters based on the modem requirements by using the following commands:

```
baud <rate>
```

```
8databits <true|false>
```

```
mode <ascii|slip|ppp>
```

For information about the configuration requirements of your modem, see the documentation shipped with the modem.

3 If you configure the port mode to slip, use the following commands to configure other SLIP parameters:

```
slip-compression <true|false>
```

```
slip-rx-compression <true|false>
```

4 If you configure the port mode to ppp, use the following commands to configure other PPP parameters:

```
mtu <bytes>
```

```
my-ip <ipaddr>
```

```
peer-ip <ipaddr>
```

```
pppfile <file>
```

5 On the modem, turn off echo mode and return code messaging.

6 Connect the modem to the modem port.

7 Save the boot configuration.

8 Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`config bootconfig sio`** command.

Variable	Value
`8databits <true|false>`	Specifies either 8 (true) or 7 (false) data bits for each byte for software to interpret. The default is false.
`baud <rate>`	Configures the baud rate for the port. The default is 9600.
`enable <true|false>`	Enables or disables the port. The default is true.
`info`	Displays information about the specified port.
`mode <ascii|slip|ppp>`	Configures the communication mode for the serial port. The default is American Standard Code for Information Interchange (ASCII). If you are configuring the modem port, you can configure the port to use the SLIP or the PPP communication mode.
`mtu <bytes>`	Configures the size of the maximum transmission unit for a PPP link (0–2048). The default is zero.
`my-ip <ipaddr>`	Configures the IP address for the server side, the Nortel Ethernet Routing Switch 8600, of the point-to-point link. The default is 0.0.0.0. Nortel recommends that you use the current IP address for the management port.

Variable	Value
`peer-ip <ipaddr>`	Configures the peer (PC) IP address on the point-to-point link. The default is 0.0.0.0. The switch assigns this value to any PC that connects through the modem port with configured TCP/IP properties to obtain an IP address automatically. If the client uses a static IP address, the Nortel Ethernet Routing Switch 8600 accepts this address. If you use Password Authentication Protocol (PAP) authentication, you must ensure that the client uses the correct IP address.
`pppfile <file>`	Specifies the PPP configuration file you must use to provide details for authentication and other options the switch includes during the boot process. If you configure the port mode to PPP, you must specify a PPP filename. For more information about this file, see "Procedure job aid: PPP file" (page 49). The PPP file name is a string value of no more than 64 characters. Identify the file in the format {a.b.c.d:|peer:|/pcmcia/|/flash/}<file>. **ATTENTION** Do not specify a PPP filename with more than 64 characters.
`restart`	Shuts down and initializes the port.
`slip-compression <true|false>`	Enables or disables Transmission Control Protocol over IP (TCP/IP) header compression for SLIP mode. The default is false.
`slip-rx-compression <true|false>`	Enables or disables TCP/IP header compression on the receive packet for SLIP mode. The default is false.

Procedure job aid: PPP file

Create the PPP file with one option on each line; comment lines start with a pound sign (#). The following table lists the available options.

Table 7
Job aid: PPP file options

Option	Description
asyncmap <value>	Configures the desired async map to the value you specify.
chap_file <file>	Obtains Challenge-Handshake Authentication Protocol (CHAP) secrets from the specified file. You require this option if either peer requires CHAP authentication. If your users must use the same IP address, the PAP and CHAP secret files must specify the same IP address for all users and it must match the peer-ip setting on the modem port.
chap_interval <value>	Configures the interval, in seconds, for the CHAP rechallenge to the value you specify.
chap_restart <value>	Configures the timeout, in seconds, for CHAP negotiation to the value you specify.
debug	Activates the PPP daemon debug mode.
default_route	Adds a default route to the system routing table, after successful Internet Protocol Control Protocol (IPCP) negotiation. Use the peer as the gateway. After the PPP connection ends, the system removes this entry.
driver_debug	Activates PPP driver debug mode.
escape_chars <value>	Configures the characters to escape on transmission to the value you specify.
ipcp_accept_local	Accepts what the remote peer uses as the target local IP address, even if the local IP address is specified.
ipcp_accept_remote	Accepts what the remote peer uses as the IP address, even if you specify the remote IP address.
ipcp_max_configure <value>	Configures the maximum number of transmissions for IPCP configuration requests to the value you specify.

Table 7
Job aid: PPP file options (cont’d.)

Option	Description
`ipcp_max_failure <value>`	Configures the maximum number of IPCP configuration negative acknowledgements (NAK) to the value you specify.
`ipcp_max_terminate <value>`	Configures the maximum number of transmissions for IPCP termination requests to the value you specify.
`ipcp_restart <value>`	Configures the timeout, in seconds, for IPCP negotiation to the value you specify.
`lcp_echo_failure <value>`	Configures the maximum consecutive Link Control Protocol (LCP) echo failures to the value you specify.
`lcp_echo_interval <value>`	Configures the interval, in seconds, between LCP echo requests to the value you specify.
`lcp_max_configure <value>`	Configures the maximum number of transmissions for LCP configuration requests to the value you specify.
`lcp_max_failure <value>`	Configures the maximum number of LCP configuration NAKs to the value you specify.
`lcp_max_terminate <value>`	Configures the maximum number of transmissions for LCP termination requests to the value you specify.
`lcp_restart <value>`	Configures the timeout in seconds for the LCP negotiation to the value you specify.
`local_auth_name <name>`	Configures the local name for authentication to the specified name.
`login`	Uses the logon password database for Password Authentication Protocol (PAP) peer authentication.
`max_challenge <value>`	Configures the maximum number of transmissions for CHAP challenge requests to the value you specify.
`mru <value>`	Configures the maximum receive unit (MRU) size for negotiation to the value you specify.

Table 7
Job aid: PPP file options (cont'd.)

Option	Description
mtu <value>	Configures the maximum transmission unit (MTU) size for negotiation to the value you specify.
netmask <value>	Configures the netmask value for negotiation to the value you specify.
no_acc	Disables address control compression.
no_all	Does not request or allow options.
no_asyncmap	Disables async map negotiation.
no_chap	Disallows CHAP authentication with peer.
no_ip	Disables IP address negotiation in IPCP.
no_mn	Disables magic number negotiation.
no_mru	Disables MRU negotiation.
no_pap	Disables PAP authentication with the peer.
no_pc	Disables protocol field compression.
no_vj	Disables Van Jacobson (VJ) compression. VJ compression reduces the regular 40-byte TCP/IP header to 3 or 8 bytes.
no_vjccomp	Disables VJ connection ID compression.
pap_file <file>	Obtains PAP secrets from the specified file. You require this option if either peer requires PAP authentication. If your users must use the same IP address, the PAP and CHAP secret files must specify the same IP address for all users and it must match the peer-ip setting on the modem port.
pap_max_authreq <value>	Configures the maximum number of transmissions for PAP authentication requests to the value you specify.
pap_passwd <password>	Configures the password for PAP authentication with the peer to the specified password.

Table 7
Job aid: PPP file options (cont'd.)

Option	Description
`pap_restart <value>`	Configures the timeout, in seconds, for PAP negotiation to the value you specify.
`pap_user_name <name>`	Configures the user name for PAP authentication with the peer to the specified name.
`passive_mode`	Configures passive mode. PPP waits for the peer to connect after an initial connection attempt.
`proxy_arp`	Adds an entry to the Address Resolution Protocol (ARP) table with the IP address of the peer and the Ethernet address of the local system.
`remote_auth_name <name>`	Configures the remote name for authentication to the specified name.
`require_chap`	Requires CHAP authentication with peer.
`require_pap`	Requires PAP authentication with peer.
`silent_mode`	Configures silent mode. PPP does not transmit LCP packets to initiate a connection until it receives a valid LCP packet from the peer.
`vj_max_slots <value>`	Configures the maximum number of VJ compression header slots to the value you specify.

Table 8 "Sample PPP file" (page 53) shows example contents from a PPP file.

Table 8
Sample PPP file

```
passive_mode
lcp_echo_interval 30
lcp_echo_failure 10
require_chap
require_pap
no_vj
ipcp_accept_remote
login
```

```
chap_file "my_chap"
pap_file "my_pap"
```

Configuring the switch with the setup utility

Configure the switch with the setup utility to monitor system requirements and obtain the maximum system performance.

Procedure steps

Step	Action
1	Start the setup utility by using the following command: `install`
2	Respond to the series of questions displayed on the screen. For more information about the prompted questions, see "Procedure job aid: setup utility prompts" (page 54).
3	Reboot the switch.

--End--

Procedure job aid: setup utility prompts

The following table lists the questions prompted by the setup utility and provides a description for each.

Table 9
Job aid: Setup utility prompt descriptions

Prompt	Description and action
Please provide primary config-file path [/flash/config.cfg]:	**Description:** Indicates the name of the primary configuration file. **Action:** Press **Enter** to accept the default (/flash/config.cfg), or type a different file name for the primary configuration file. To store your configuration file on the PCMCIA card, use /PCMCIA/config.cfg. To specify the path to the file is optional.

Table 9
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Please provide primary image-file path [/flash/p80a4100.img]:	**Description:** Indicates the name of the primary image file. **Action:** Press **Enter** to accept the default (p80a4100.img), or type a different file name for the primary image file. To specify the path to the file is optional. If your run-time image resides on your PCMCIA card, you must specify the path as /PCMCIA/ filename.
Please add system prompt [ERS-8606]:	**Description:** Specifies the text for the prompt. **Action:** Press **Enter** to accept the default (ERS-8610), or type a different string of up to 20 characters.
Please select CPU primary slot (5/6) [5]:	**Description:** Indicates the slot number of the primary central processing unit (CPU). The slot can be 5 or 6. **Action:** Press **Enter** to accept the default (5), or specify 6.
Primary CPU mgmt port: autonegotiation [n] (y/n)?	**Description:** Specifies if you want the primary CPU to use autonegotiation. **Action:** Enter **n** to accept the default, or enter **y** to indicate that you want the primary CPU management port to use autonegotiation.
speed (10/100) [10]:	**Description:** Specifies the line speed in Mb/s. **Action:** Press **Enter** to accept the default (10 Mb/s), or specify 100 Mb/s.
Do you want to enable automatic savetostandby mode [n] (y/n)?	**Description:** Specifies if you want the boot and run-time configuration files to be saved on the backup CPU. **Action:** Enter **y** to save the boot and run-time configuration files on the backup CPU. Accept the default (**n**) to save boot and run-time configuration files on the primary CPU.

Table 9
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Do you want to enable m-mode support [n] (y/n)?	**Description:** Specifies if you want the chassis to run in 128 K mode. To run in 128 K mode, the CPU module must be an 8691 or higher and the switch must use at least one 8600 module (128 K module). **ATTENTION** If you enable M mode support and you use a mixed configuration of modules, you disable the E modules and Pre-E modules. **ATTENTION** If you enable M mode support and you use a mixed configuration of modules, you disable the E modules. **Action:** Enter **y** if you want the chassis to run in 128 K M mode. Accept the default (**n**), if you want it to run in 32 K mode only.
Do you want to enable enhanced operation mode support [n] (y/n)?	**Description:** Specifies if you want to enable enhanced operation mode. Enhanced operation mode increases the maximum number of VLANs when you use MultiLink Trunking (MLT) (1980) and Split MLT (SMLT) (989). This mode requires 8600 E- or M-modules. **ATTENTION** If you enable enhanced operation mode and you use a mixed configuration of modules, you disable the Pre-E modules. **Action:** Enter **y** to enable enhanced operation mode. Accept the default (**n**), to not enable enhanced operation mode.

Table 9
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Do you want to enable CPU High Availability mode [n] (y/n)?	**Description:** Specifies if you want to enable CPU high availability (HA) mode. Use CPU HA mode to recover switches with two CPUs quickly from a failure of one of the CPUs. In HA mode (hot standby), you synchronize and configure the two CPUs in the same mode, so they are compatible. **Action:** Specify **y** to enable CPU high availability (HA) mode. Accept the default (**n**), to not enable CPU HA mode.
Do you want to enable vlan-optimization-mode support [n] (y/n) ?	**Description:** Specifies if you want to enable support for the VLAN optimization mode. **Action:** Specify y to enable VLAN optimization mode support. Accept the default (**n**) to not enable VLAN optimization mode support.
Do you want to enable r-mode support [n] (y/n) ?	**Description:** Specifies if you want to enable support for the R mode support. **Action:** Specify y to enable R mode support. Accept the default (**n**) to not enable R mode support.
Do you want to enable FTP [n] (y/n)?	**Description:** Specifies if you want users to access the switch by File transfer Protocol (FTP). **Action:** Enter **y** to enable FTP for remote users. Accept the default (**n**) to not enable FTP.
Do you want to enable RLOGIN [n] (y/n)?	**Description:** Specifies if you want to access the switch by Rlogin. **Action:** Enter **y** to enable Rlogin for remote users. Accept the default (**n**) to not enable Rlogin.

Table 9
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Do you want to enable TELNET [n] (y/n)?	**Description:** Specifies if you want to access the switch by Telnet. **Action:** Enter **y** to enable Telnet. Accept the default (**n**) to not enable Telnet.
Do you want to enable TFTP [n] (y/n)?	**Description:** Specifies if you want to access the switch by Trivial FTP (TFTP). **Action:** Enter **y** to enable TFTP. Accept the default (**n**) to not enable TFTP.
Do you want to enable WEB server service [n] (y/n)?	**Description:** Specifies if you want to enable Web server service. Use the Web server service to monitor statistics for the switch with your Web browser. **Action:** Enter **y** to enable Web server service. Accept the default (**n**) to not enable Web server service.
IP Address for mgmt port in first CPU Slot [192.168.168.168/255.255.2.55.0]:	**Description:** Indicates the IP address for the management port in the CPU slot you specify. **Action:** Type the IP address of the management port in the first CPU slot.
IP Address for mgmt port in second CPU Slot [192.168.168.169/255.255.255.0]:	**Description:** Indicates the IP address for the management port in the CPU slot you specify. **Action:** Type the IP address of the management port in the second CPU slot.
IP Address for mgmt-virtual-ip [0.0.0.0/0.0.0.0]:	**Description:** Indicates the IP address for the virtual management port. **Action:** Type the IP address of the virtual management port. Accept the default (0.0.0.0/0.0.0.0) to not specify an IP address.

Table 9
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
First net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the first network management route (static route from the network management port to a device in the network). **Action:** Type the network and gateway IP address of the first network management route.
Second net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the second network management route. **Action:** Type the IP address of the second network management route (static route from the network management port to a device in the network).
Third net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the third network management route. **Action:** Type the IP address of the third network management route (static route from the network management port to a device in the network).
Fourth net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the fourth network management route. **Action:** Type an IP address of the fourth network management route (static route from the network management port to a device in the network).
IP address of the default VLAN [0.0.0.0/0.0.0.0]:	**Description:** Specifies the IP address of the default Virtual Local Area Network (VLAN). **Action:** Type the IP address of the default VLAN.
Do you want to save the changes [Saving the parameters updates the files /flash/boot.cfg and /flash/dvmrp_pol.cfg] (y/n)?	**Description:** Saves your changes to the boot and run-time configuration files. **Action:** Enter **y** to save the boot and run-time configuration files. Enter **n** if you do not want to save your changes.

Configuring system identification

Configure system identification to specify the system name, contact person, and location of the switch.

Procedure steps

Step	Action
1	Specify the system name by using the following command: **`config sys set name <prompt>`**
2	Specify the name of the contact person for the switch by using the following command: **`config sys set contact <contact>`**
3	Define the location for the system by using the following command: **`config sys set location <location>`**

--End--

Variable definitions

Use the data in the following table to use the **`config sys set`** command.

Variable	Value
`clipId-topology-ip <id>`	Sets the topology IP from the available CLIP.**`id`** is the circless IP interface id in the range of 1 to 256.
`clock-sync-time <minutes>`	Configures the RTC-to-system clock synchronization time. **`minutes`** is the RTC-to-System clock synchronization time in minutes in the range of 15 to 3600.
`contact <contact>`	Alters the system contact.**`contact`** is the system contact. The string length is in the range of 0 to 255.
`ecn-compatibility <enable|disable>`	Enables or disables ecn-compatibility feature.
`force-topology-ip-flag <true|false>`	Sets flag to force choice of topology-IP. **`true|false`** Enables or disables Force Topology IP Flag.
`global-filter <enable|disable>`	Enables global filter feature.
`info`	Shows current level parameter settings and next level directories.

Variable	Value
location <location>	Changes the system location.
max-vlan-resource-reservation <enable|disable>	Enables MAX-VLAN feature.
mgmt-virtual-ip <ipaddr/mask>	Configures mgmt virtual IP.**ipaddr/mask** is the IP address and network mask {a.b.c.d/x | a.b.c.d/x.x.x.x | default}.
mgmt-virtual-ipv6 <ipv6addr/prefix-len>	Configures mgmt virtual IPV6.**ipv6addr/prefix-len** is the IPV6 address. The string length ranges from 0 to 46.
mroute-stream-limit <enable|disable>	Global mroute stream limit configuration.**enable|disable** enables or disables mroute stream limit.
mtu <bytes>	Sets MTU (with CRC) to one of three values: 1522, 1950 and 9600 bytes. is the MTU value in the range of 1522 to 9600.
multicast-resource-reservation <value>	Reserves MGIDs for IPMC use.**value** is the number of MGIDs reserved for IPMC use in the range from 64 to 4083.
name <prompt>	Changes the system name. **prompt** is the box or root level prompt . The string length ranges from 0 to 255.
portlock <on|off>	Turns portlock on/off.
sendAuthenticationTrap <true|false>	Sets authentication trap to true or false.
smlt-on-single-cp <enable|disable> [timer <value>]	Enables SMLT on Single CP feature. • **enable|disable** Enables or disable SMLT on single CP feature. • **[timer <value>]** is the timer value for SMLT on single CP feature timer in the range of 1 to 3.
topology <on|off>	Turns topology on/off.
udp-checksum <enable|disable>	Enables or disables UDP Checksum calculation.

Configuring the time zone

Set the time zone to specify the time zone for your location and configure settings for Daylight Saving Time (DST).

Procedure steps

Step	Action
1	Configure the time zone by using the following command: **`config bootconfig tz`**
2	Save the changed configuration to the boot.cfg and pcmboot.cfg files.
3	Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`config bootconfig tz`** command.

Variable	Value
`dst-end <Mm.n.d/hhmm|MMddhhmm>`	Configures the ending date of DST. You can specify the time in one of two ways: • **`Mm.n.d/hhmm`** specifies an hour on the nth occurrence of a weekday in a month. For example, **`M10.5.0/0200`** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **`MMddhhmm`** specifies a month, day, hour, and minute. For example, **`10310200`** means October 31 at 2:00 a.m.
`dst-name <dstname>`	Configures an abbreviated name for the local daylight saving time zone. **`dstname`** is the name. For example, PDT is Pacific Daylight Time.

Variable	Value
dst-offset <minutes>	Configures the daylight saving adjustment in minutes. The default is 60 minutes.
dst-start <Mm.n.d/hhmm|MMd dhhmm>	Configures the starting date of daylight saving time. • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example, **10310200** means October 31 at 2:00 a.m.
info	Displays time zone information.
name <tz>	Configures an abbreviated name for the local time zone name. **tz** is the name. For example, PST is Pacific Standard Time.
offset-from-utc <minutes>	Configures the time zone offset in minutes to subtract from Universal Coordinated Time (UTC), where positive numbers mean west of Greenwich and negative numbers mean east of Greenwich.

Configuring the date

Configure the calendar time in the form of month, day, year, hour, minute, and second.

Prerequisites

- You must log on with the rwa credentials to use the command in this procedure.

Procedure steps

Action

Configure the date by using the following command:

```
config setdate <MMddyyyyhhmmss>
```

Specifying the primary SF/CPU

Specify the primary SF/CPU to determine which SF/CPU you use as the primary after the switch performs a full power cycle only. When the SF/CPU becomes the primary, the master LED for the SF/CPU is on.

Procedure steps

Step	Action
1	View the current setting for the primary SF/CPU by using the following command: `show bootconfig master`
2	Specify the slot of the primary SF/CPU by using the following command: `config bootconfig master <cpu-slot>`
3	Save the configuration to the boot.cfg and pcmboot.cfg files.
4	Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`config bootconfig master`** command.

Variable	Value
`<cpu-slot>`	Specifies the slot number for the primary SF/CPU. This variable can be 5 or 6. The default primary is slot 5.

Changing passwords

Configure new passwords for each access level, or change the logon or password for the different access levels of the switch. After you receive the Nortel Ethernet Routing Switch 8600, use default passwords to initially access the CLI. If you use Simple Network Management Protocol version 3 (SNMPv3), you can change encrypted passwords.

Prerequisites

- You must use an account with read/write/all privileges to change passwords. For security, the switch saves passwords to a hidden file. The optional parameter **`password`** is the password associated with the user name or logon name.

Procedure steps

Action

Change a password by using the following command:

`config cli password`

Variable definitions

Use the data in the following table to use the **`config cli password`** command.

Variable	Value
`access-level <access level> <enable|disable>`	Permits or blocks this access level. • **`access level`** is an integer from 2–8. • **`enable|disable`** enables or disables the chosen level.
`aging <days>`	Configures the time limit for passwords. **`days`**is the age-out time as an integer from 1–365.
`default-lockout-time <secs>`	Changes the default lockout time after three invalid attempts. **`secs`** is the lockout time in seconds and is in the 60–6500 range. The default is 60 seconds.
`info`	Shows the level parameter settings and the next level directories.

l1 <username> [<password>]	Changes the Layer 1 read/write logon or password. • **username** is the logon name • **password** is the password associated with the logon name.
l2 <username> <password>	Changes the Layer 2 read/write logon or password. • **username** is the logon name.
l3 <username> [<password>]	Changes the Layer 3 read/write logon and/or password (applies only to the Nortel Ethernet Routing Switch 8600). • **username** is the logon name. • **password** is the password associated with the logon name.
l4admin <username>	Configures the Layer 4 administrator logon to connect to the Web Switching Module (WSM). For more information about the WSM, see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals, NN46205-314*.
l4oper <username>	Configures the Layer 4 operator logon to connect to the WSM. For more information about the WSM, see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals, NN46205-314*.
lockout-time <HostAddress> <secs>	Configures the host lockout time. • **HostAddress** is the host IP address in the format a.b.c.d. • **secs** is the lockout time limit in seconds for passwords lockout in the 60–65000 range. The default is 60 seconds.

min-passwd-len <integer>	Configures the minimum length for passwords in high-secure mode. **integer** is in a minimum range of 10–20.
oper <username>	Configures the operator logon to connect to the WSM. For more information about the WSM, see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals, NN46205-314*.
password-history <number>	Specifies the number of previous passwords the switch stores. You cannot reuse a password that is stored in the password history.**number** uses a configurable range of 3–32 and the default is 3.
ro <username> [<password>]	Changes the read-only logon or password. • **username** is the logon name. • **password** is the password associated with the logon name.
rw <username> [<password>]	Changes the read/write logon or password. • **username** is the logon name. • **password** is the password associated with the logon name.
rwa <username> [<password>]	Changes the read/write/all logon or password. • **username** is the logon name. • **password** is the password associated with the logon name.
slboper <username>	Configures the server load balancing (SLB) operator logon to connect to the WSM. For more information about the WSM, see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals, NN46205-314*.

`slbadmin <username>`	Configures the SLB administrator logon to connect to the WSM. For more information about the WSM, see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals, NN46205-314*.
`ssladmin <username>`	Configures the ssladmin logon to connect to and configure the secure sockets layer (SSL) Acceleration Module (SAM).

Resetting passwords

Reset passwords to restore them to the factory default values.

Procedure steps

Action

From the boot monitor CLI, reset passwords by using the following command:

```
reset-passwd
```

Initial steps using the NNCLI

The initial commissioning steps involve basic setting configuration.

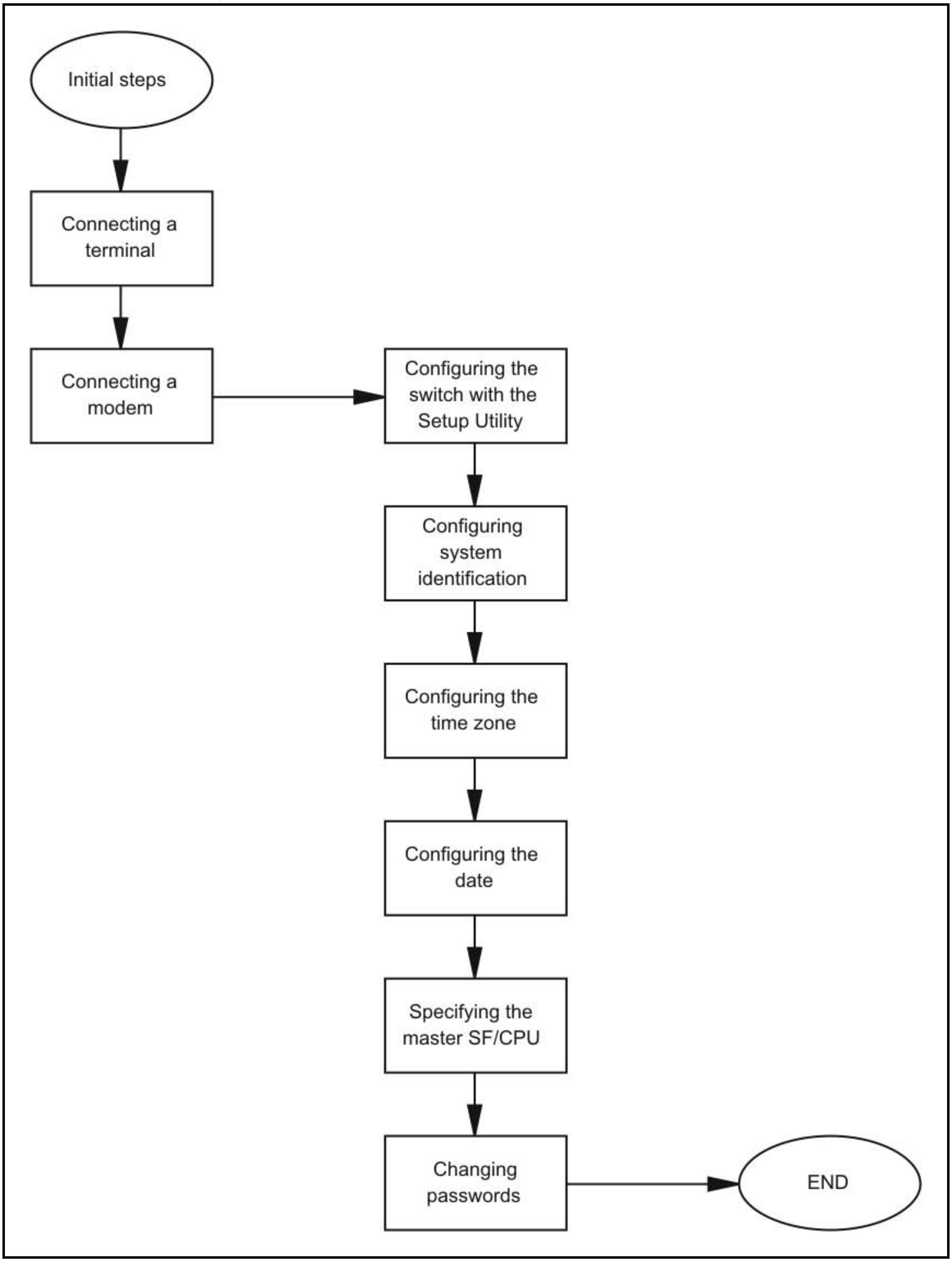
Prerequisites to initial steps

- You must install the hardware.
- You must install at least one cable to set up a remote connection to the switch.
- You must power up the switch.

Initial commissioning procedures

The following task flow shows the sequence of procedures you perform for the initial commissioning steps. To link to a procedure, click on the procedure title in "Initial commissioning navigation" (page 71).

Figure 9
Initial commissioning procedures


Initial steps
Connecting a terminal
Connecting a modem
Configuring the switch with the Setup Utility
Configuring system identification
Configuring the time zone
Configuring the date
Specifying the master SF/CPU
Changing passwords
END

Initial commissioning navigation

Job aid: Roadmap of initial NNCLI commands

The following table lists the commands and the parameters you use to complete the procedures in this section. The last two columns indicate which commands support the no and default forms of the command.

Table 10
Job aid: Roadmap of initial NNCLI commands

Command	Parameter
Privileged EXEC mode	
`clock set <MMddyyyyhhmmss>`	
`install`	
`show boot config master`	
Global Configuration mode	
`boot config master <cpu-slot>`	

Table 10
Job aid: Roadmap of initial NNCLI commands (cont’d.)

Command	Parameter
boot config sio modem	8databits
	baud <rate>
	mode <ascii|slip|ppp>
	mtu <bytes>
	my-ip <ipaddr>
	peer-ip <ipaddr>
	pppfile <file>
	restart
	slip-compression
	slip-rx-compression
boot config tz	dst-end <Mm.n.d/hhmm|MMddhhmm>
	dst-name <dstname>
	dst-offset <minutes>
	dst-start <Mm.n.d/hhmm|MMddhhmm>
	name <tz>
	offset-from-utc <minutes>
cli password <word>	<access-level>
password	access-level <word>
	aging-time day <1-365>
	default-lockout-time <60-65000>
	lockout <word> time <time>
	min-passwd-len <10-20>
	password-history <3-32>
snmp-server	contact <word>
	agent-conformance enable
	authentication-trap enable min-secure|semi-secure|very-secure

Table 10
Job aid: Roadmap of initial NNCLI commands (cont'd.)

Command	Parameter
	`community`
	`contact <WORD 0-255>`
	`force`
	`group`
	`host`
	`location <word>`
	`log enable|maxfilesize`
	`name <WORD 0-255>`
	`notify-filter <WORD 1-32> <WORD 1-32>`
	`sender-ip {A.B.C.D} {A.B.C.D}`
	`user`
	`view <WORD 1-32> <WORD 1-32>`
`sys name <word>`	

Connecting a terminal

Connect a terminal to the serial console interface to monitor and configure the switch.

Prerequisites

- To use the console port, you need the following equipment:
  - — a terminal or teletypewriter (TTY)-compatible terminal, or a portable computer with a serial port and terminal-emulation software
  - — an Underwriters Laboratories (UL)-listed straight-through or null modem RS-232 cable with a female DB-9 connector for the console port on the switch
    The other end of the cable must use a connector appropriate to the serial port on your computer or terminal. Most computers or terminals use a male DB-25 connector. You can find a null modem cable with the chassis.
- You must shield the cable connected to the console port to comply with emissions regulations and requirements.

Procedure steps

Step **Action**

1 Configure the terminal protocol as follows:

- 9600 baud
- 8 data bits
- 1 stop bit
- No parity

2 Connect the RS-232 cable to the console port.

3 Connect the other end of the RS-232 cable to the terminal or computer serial port.

4 Turn on the terminal.

5 Log on to the NNCLI.

--End--

Connecting a modem

Connect a modem to a Nortel Ethernet Routing Switch 8600 to establish a connection with the switch. You can configure the modem port first using another type of connection, such as a terminal connection, to the NNCLI.

Prerequisites

- You need a DTE-to-DCE cable (straight or transmit cable) to connect the Nortel Ethernet Routing Switch 8600 to the modem.
- You must configure your client dial-up settings to establish the connection to the modem.
- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step **Action**

1 Configure port parameters based on the modem requirements by using the following command:

```
boot config sio modem [8databits][baud <rate>] [mode
<ascii|slip|ppp>]
```

For information about the configuration requirements of your modem, see the documentation shipped with the modem.

ATTENTION
Nortel recommends that before you configure the Serial Line Internet Protocol (SLIP) or the Point-to-Point Protocol (PPP), you familiarize yourself with these protocols.

2 If you configure the port mode to **`slip`**, use the following command to configure other SLIP parameters:

```
boot config sio modem [slip-compression] [slip-rx-compression]
```

3 If you configure the port mode to **`ppp`**, use the following commands to configure other PPP parameters:

```
boot config sio modem [mtu <bytes>] [my-ip <ipaddr>]
[peer-ip <ipaddr>] pppfile <file>
```

4 On the modem, turn off echo mode and return code messaging.

5 Connect the modem to the modem port.

6 Save the boot configuration.

7 Optionally, shutdown and reinitialize the port by using the following command:

```
boot config sio modem restart
```

8 Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`boot config sio`** command.

Variable	Value
`8databits`	Specifies either 8 (enabled) or 7 (disabled) data bits for each byte for software to interpret. The default is disabled. Use the **`no`** operator to remove this configuration. To configure this option to the default value, use the **`default`** operator with the command.
`baud <rate>`	Configures the baud rate for the port. The default is 9600. To configure this option to the default value, use the **`default`** operator with the command.

Variable	Value
mode <ascii|slip|ppp>	Configures the communication mode for the serial port. The default is American Standard Code for Information Interchange (ASCII). If you are configuring the modem port, you can configure the port to use either the SLIP or the PPP communication mode. To configure this option to the default value, use the **default** operator with the command.
mtu <bytes>	Configures the size of the maximum transmission unit for a PPP link (0–2048). The default is 0. To configure this option to the default value, use the **default** operator with the command.
my-ip <ipaddr>	Configures the IP address for the server side, the Nortel Ethernet Routing Switch 8600, of the point-to-point link. The default is 0.0.0.0. Nortel recommends that you use the current IP address for the management port. To configure this option to the default value, use the **default** operator with the command.
peer-ip <ipaddr>	Configures the peer (PC) IP address on the point-to-point link. The default is 0.0.0.0. The switch assigns this value to any PC that connects through the modem port with configured TCP/IP properties to obtain an IP address automatically. If the client uses a static IP address, the Nortel Ethernet Routing Switch 8600 accepts this address. If you use Password Authentication Protocol (PAP) authentication, you must ensure that the client uses the correct IP address. To configure this option to the default value, use the **default** operator with the command.
pppfile <file>	Specifies the PPP configuration file to provide details for authentication and other options to include during the boot procedure of the switch. The PPP filename is a string value of no more than 64 characters. Identify the file in the format {a.b.c.d:|peer:|/pcmcia/|/flash/}<file>. For more information about this file, see "Procedure job aid: PPP file" (page 77). **ATTENTION** Do not specify a PPP filename with more than 64 characters. To configure this option to the default value, use the **default** operator with the command.

restart	Shuts down and initializes the port.
slip-compression	Enables or disables Transmission Control Protocol over IP (TCP/IP) header compression for SLIP mode. The default is false. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command.
slip-rx-compression	Enables or disables TCP/IP header compression on the receive packet for SLIP mode. The default is false. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command.

Procedure job aid: PPP file

Create the PPP file with one option on each line; comment lines start with a pound sign (#). The following table lists the recognized options.

Table 11
Job aid: PPP file options

Option	Description
asyncmap <value>	Configures the desired async map to the value you specify.
chap_file <file>	Obtains Challenge-Handshake Authentication Protocol (CHAP) secrets from the specified file. You require this option if either peer requires CHAP authentication. If your users must use the same IP address, the PAP and CHAP secret files must specify the same IP address for all users and it must match the peer-ip setting on the modem port.
chap_interval <value>	Configures the interval, in seconds, for the CHAP rechallenge to the value you specify.
chap_restart <value>	Configures the timeout, in seconds, for CHAP negotiation to the value you specify.
debug	Activates the PPP daemon debug mode.

Table 11
Job aid: PPP file options (cont'd.)

Option	Description
`default_route`	Adds a default route to the system routing table, after successful Internet Protocol Control Protocol (IPCP) negotiation. Use the peer as the gateway. After the PPP connection ends, the system removes this entry.
`driver_debug`	Activates PPP driver debug mode.
`escape_chars <value>`	Configures the characters to escape on transmission to the value you specify.
`ipcp_accept_local`	Accepts what the remote peer uses as the target local IP address, even if the local IP address is specified.
`ipcp_accept_remote`	Accepts what the remote peer uses as the IP address, even if you specify the remote IP address.
`ipcp_max_configure <value>`	Configures the maximum number of transmissions for IPCP configuration requests to the value you specify.
`ipcp_max_failure <value>`	Configures the maximum number of IPCP configuration negative acknowledgements (NAK) to the value you specify.
`ipcp_max_terminate <value>`	Configures the maximum number of transmissions for IPCP termination requests to the value you specify.
`ipcp_restart <value>`	Configures the timeout, in seconds, for IPCP negotiation to the value you specify.
`lcp_echo_failure <value>`	Configures the maximum consecutive Link Control Protocol (LCP) echo failures to the value you specify.
`lcp_echo_interval <value>`	Configures the interval, in seconds, between LCP echo requests to the value you specify.
`lcp_max_configure <value>`	Configures the maximum number of transmissions for LCP configuration requests to the value you specify.
`lcp_max_failure <value>`	Configures the maximum number of LCP configuration NAKs to the value you specify.

Table 11
Job aid: PPP file options (cont'd.)

Option	Description
`lcp_max_terminate <value>`	Configures the maximum number of transmissions for LCP termination requests to the value you specify.
`lcp_restart <value>`	Configures the timeout in seconds for the LCP negotiation to the value you specify.
`local_auth_name <name>`	Configures the local name for authentication to the specified name.
`login`	Uses the logon password database for Password Authentication Protocol (PAP) peer authentication.
`max_challenge <value>`	Configures the maximum number of transmissions for CHAP challenge requests to the value you specify.
`mru <value>`	Configures the maximum receive unit (MRU) size for negotiation to the value you specify.
`mtu <value>`	Configures the maximum transmission unit (MTU) size for negotiation to the value you specify.
`netmask <value>`	Configures the netmask value for negotiation to the value you specify.
`no_acc`	Disables address control compression.
`no_all`	Does not request or allow options.
`no_asyncmap`	Disables async map negotiation.
`no_chap`	Disallows CHAP authentication with peer.
`no_ip`	Disables IP address negotiation in IPCP.
`no_mn`	Disables magic number negotiation.
`no_mru`	Disables MRU negotiation.
`no_pap`	Disables PAP authentication with the peer.
`no_pc`	Disables protocol field compression.
`no_vj`	Disables Van Jacobson (VJ) compression. VJ compression reduces the regular 40-byte TCP/IP header to 3 or 8 bytes.

Table 11
Job aid: PPP file options (cont’d.)

Option	Description
`no_vjccomp`	Disables VJ connection ID compression.
`pap_file <file>`	Obtains PAP secrets from the specified file. You require this option if either peer requires PAP authentication. If your users must use the same IP address, the PAP and CHAP secret files must specify the same IP address for all users and it must match the peer-ip setting on the modem port.
`pap_max_authreq <value>`	Configures the maximum number of transmissions for PAP authentication requests to the value you specify.
`pap_passwd <password>`	Configures the password for PAP authentication with the peer to the specified password.
`pap_restart <value>`	Configures the timeout, in seconds, for PAP negotiation to the value you specify.
`pap_user_name <name>`	Configures the user name for PAP authentication with the peer to the specified name.
`passive_mode`	Configures passive mode. PPP waits for the peer to connect after an initial connection attempt.
`proxy_arp`	Adds an entry to the Address Resolution Protocol (ARP) table with the IP address of the peer and the Ethernet address of the local system.
`remote_auth_name <name>`	Configures the remote name for authentication to the specified name.
`require_chap`	Requires CHAP authentication with peer.
`require_pap`	Requires PAP authentication with peer.

Table 11
Job aid: PPP file options (cont'd.)

Option	Description
`silent_mode`	Configures silent mode. PPP does not transmit LCP packets to initiate a connection until it receives a valid LCP packet from the peer.
`vj_max_slots <value>`	Configures the maximum number of VJ compression header slots to the value you specify.

Table 12 "Sample PPP file" (page 81)shows example contents from a PPP file.

Table 12
Sample PPP file

```
passive_mode
lcp_echo_interval 30
lcp_echo_failure 10
require_chap
require_pap
no_vj
ipcp_accept_remote
login
chap_file "my_chap"
pap_file "my_pap"
```

Configuring the switch with the setup utility

Configure the switch with the setup utility to monitor system requirements and obtain the maximum system performance.

Prerequisites

- You must log on to the Privileged EXEC mode in the NNCLI.

Procedure steps

Step	Action
1	Start the setup utility by using the following command: **`install`**
2	Respond to the series of questions displayed on the screen.

For more information about the prompted questions, see "Procedure job aid: setup utility prompts" (page 82).

3 Reboot the switch.

--End--

Procedure job aid: setup utility prompts

The following table lists the questions prompted by the setup utility and provides a description for each.

Table 13
Job aid: Setup utility prompt descriptions

Prompt	Description and action
Please provide primary config-file path [/flash/config.cfg]:	**Description:** Indicates the name of the primary configuration file. **Action:** Press **Enter** to accept the default (/flash/config.cfg), or type a different file name for the primary configuration file. To store your configuration file on the PCMCIA card, use /PCMCIA/config.cfg. To specify the path to the file is optional.
Please provide primary image-file path [/flash/p80a4100.img]:	**Description:** Indicates the name of the primary image file. **Action:** Press **Enter** to accept the default (p80a4100.img), or type a different file name for the primary image file. To specify the path to the file is optional. If your run-time image resides on your PCMCIA card, you must specify the path as /PCMCIA/ filename.
Please add system prompt [ERS-8606]:	**Description:** Specifies the text for the prompt. **Action:** Press **Enter** to accept the default (ERS-8610), or type a different string of up to 20 characters.
Please select CPU primary slot (5/6) [5]:	**Description:** Indicates the slot number of the primary central processing unit (CPU). The slot can be 5 or 6. **Action:** Press **Enter** to accept the default (5), or specify 6.

Table 13
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Primary CPU mgmt port: autonegotiation [n] (y/n)?	**Description:** Specifies if you want the primary CPU to use autonegotiation. **Action:** Enter **n** to accept the default, or enter **y** to indicate that you want the primary CPU management port to use autonegotiation.
speed (10/100) [10]:	**Description:** Specifies the line speed in Mb/s. **Action:** Press **Enter** to accept the default (10 Mb/s), or specify 100 Mb/s.
Do you want to enable automatic savetostandby mode [n] (y/n)?	**Description:** Specifies if you want the boot and run-time configuration files to be saved on the backup CPU. **Action:** Enter **y** to save the boot and run-time configuration files on the backup CPU. Accept the default (**n**) to save boot and run-time configuration files on the primary CPU.
Do you want to enable m-mode support [n] (y/n)?	**Description:** Specifies if you want the chassis to run in 128 K mode. To run in 128 K mode, the CPU module must be an 8691 or higher and the switch must use at least one 8600 module (128 K module). **ATTENTION** If you enable M mode support and you use a mixed configuration of modules, you disable the E modules and Pre-E modules. **ATTENTION** If you enable M mode support and you use a mixed configuration of modules, you disable the E modules. **Action:** Enter **y** if you want the chassis to run in 128 K M mode. Accept the default (**n**), if you want it to run in 32 K mode only.

Table 13
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Do you want to enable enhanced operation mode support [n] (y/n)?	**Description:** Specifies if you want to enable enhanced operation mode. Enhanced operation mode increases the maximum number of VLANs when you use MultiLink Trunking (MLT) (1980) and Split MLT (SMLT) (989). This mode requires 8600 E- or M-modules. **ATTENTION** If you enable enhanced operation mode and you use a mixed configuration of modules, you disable the Pre-E modules. **Action:** Enter **y** to enable enhanced operation mode. Accept the default (**n**), to not enable enhanced operation mode.
Do you want to enable CPU High Availability mode [n] (y/n)?	**Description:** Specifies if you want to enable CPU high availability (HA) mode. Use CPU HA mode to recover switches with two CPUs quickly from a failure of one of the CPUs. In HA mode (hot standby), you synchronize and configure the two CPUs in the same mode, so they are compatible. **Action:** Specify **y** to enable CPU high availability (HA) mode. Accept the default (**n**), to not enable CPU HA mode.
Do you want to enable vlan-optimization-mode support [n] (y/n) ?	**Description:** Specifies if you want to enable support for the VLAN optimization mode. **Action:** Specify y to enable VLAN optimization mode support. Accept the default (**n**) to not enable VLAN optimization mode support.
Do you want to enable r-mode support [n] (y/n) ?	**Description:** Specifies if you want to enable support for the R mode support. **Action:** Specify y to enable R mode support. Accept the default (**n**) to not enable R mode support.

Table 13
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
Do you want to enable FTP [n] (y/n)?	**Description:** Specifies if you want users to access the switch by File transfer Protocol (FTP). **Action:** Enter **y** to enable FTP for remote users. Accept the default (**n**) to not enable FTP.
Do you want to enable RLOGIN [n] (y/n)?	**Description:** Specifies if you want to access the switch by Rlogin. **Action:** Enter **y** to enable Rlogin for remote users. Accept the default (**n**) to not enable Rlogin.
Do you want to enable TELNET [n] (y/n)?	**Description:** Specifies if you want to access the switch by Telnet. **Action:** Enter **y** to enable Telnet. Accept the default (**n**) to not enable Telnet.
Do you want to enable TFTP [n] (y/n)?	**Description:** Specifies if you want to access the switch by Trivial FTP (TFTP). **Action:** Enter **y** to enable TFTP. Accept the default (**n**) to not enable TFTP.
Do you want to enable WEB server service [n] (y/n)?	**Description:** Specifies if you want to enable Web server service. Use the Web server service to monitor statistics for the switch with your Web browser. **Action:** Enter **y** to enable Web server service. Accept the default (**n**) to not enable Web server service.
IP Address for mgmt port in first CPU Slot [192.168.168.168/255.255.2.55.0]:	**Description:** Indicates the IP address for the management port in the CPU slot you specify. **Action:** Type the IP address of the management port in the first CPU slot.
IP Address for mgmt port in second CPU Slot [192.168.168.169/255.255.255.0]:	**Description:** Indicates the IP address for the management port in the CPU slot you specify. **Action:** Type the IP address of the management port in the second CPU slot.

Table 13
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
IP Address for mgmt-virtual-ip [0.0.0.0/0.0.0.0]:	**Description:** Indicates the IP address for the virtual management port. **Action:** Type the IP address of the virtual management port. Accept the default (0.0.0.0/0.0.0.0) to not specify an IP address.
First net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the first network management route (static route from the network management port to a device in the network). **Action:** Type the network and gateway IP address of the first network management route.
Second net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the second network management route. **Action:** Type the IP address of the second network management route (static route from the network management port to a device in the network).
Third net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the third network management route. **Action:** Type the IP address of the third network management route (static route from the network management port to a device in the network).
Fourth net mgmt route [0.0.0.0:0.0.0.0]:	**Description:** Specifies the IP address of the fourth network management route. **Action:** Type an IP address of the fourth network management route (static route from the network management port to a device in the network).

Table 13
Job aid: Setup utility prompt descriptions (cont'd.)

Prompt	Description and action
IP address of the default VLAN [0.0.0.0/0.0.0.0]:	**Description:** Specifies the IP address of the default Virtual Local Area Network (VLAN). **Action:** Type the IP address of the default VLAN.
Do you want to save the changes [Saving the parameters updates the files /flash/boot.cfg and /flash/dvmrp_pol.cfg] (y/n)?	**Description:** Saves your changes to the boot and run-time configuration files. **Action:** Enter **y** to save the boot and run-time configuration files. Enter **n** if you do not want to save your changes.

Configuring system identification

Configure system identification to specify the system name, contact person, and location of the switch.

Prerequisites

- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Change the system name by using the following command: **`sys name <word>`**
2	Configure the system contact by using the following command: **`snmp-server contact <word>`**
3	Configure the system location by using the following command: **`snmp-server location <word>`**

--End--

Variable definitions

Use the data in the following table to use system-level commands.

Variable	Value
`agent-conformance`	Enables agent conformance mode.

Variable	Value
authentication-trap	Enables or disables generation of authentication traps.
bootstrap	Sets SNMP initial user entry.
community	Sets community table.
contact <word>	Identifies the contact person who manages the node. To include blank spaces in the contact, use quotation marks (") around the text. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command. The default is support@nortelnetworks.com.
force-iphdr-sender	Sets same SNMP and IP sender flag.
force-trap-sender	Sets SNMP trap sender IP.
group	Sets SNMP v3 group access table.
host	Specifies hosts to receive SNMP notifications.
location <word>	Identifies the physical location of the node. To include blank spaces in the location, use quotation marks (") around the text. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **default** operator with the command. The default is a Nortel address.
log	Specifies the SNMP log feature.
name <word>	Configures the system or root level prompt name for the switch. **word** is an ASCII string from 1 to 255 characters (for example, LabSC7 or Closet4).
notify-filter	Creates new entry for notify filter table.
sender-ip	Sets SNMP trap sender IP.
user	Creates or modifies SNMPv3 user.
view	Creates or modifies an SNMP access view.

Example of configuring system identification

Procedure steps

Step	Action
1	Change the system name by using the following command: `ERS-8610:5(config)#sys name ERS-8610`
2	Configure the system contact by using the following command: `ERS-8610:5(config)#snmp-server contact joe.smith@somecompany.com`
3	Configure the system location by using the following command: `ERS-8610:5(config)#snmp-server location "12 Main St, Vancouver, BC"`

--End--

Configuring the time zone

Configure the time zone to specify the time zone for your location and configure settings for Daylight Saving Time (DST).

Prerequisites

- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Configure the time zone by using the following command: `boot config tz`
2	Save the changed configuration to the boot.cfg and pcmboot.cfg files.
3	Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`boot config tz`** command.

Variable	Value
dst-end <Mm.n.d/hhmm|MMddhhmm>	Configures the ending date of DST. You can specify the time in one of two ways: • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example, **10310200** means October 31 at 2:00 a.m.
dst-name <dstname>	Configures an abbreviated name for the local daylight saving time zone. **dstname** is the name. For example, PDT is Pacific Daylight Time. To configure this option to the default value, use the **default** operator with the command.
dst-offset <minutes>	Configures the daylight saving adjustment in minutes. The default is 60 minutes. To configure this option to the default value, use the **default** operator with the command.
dst-start <Mm.n.d/hhmm|MMddhhmm>	Configures the starting date of DST. • **Mm.n.d/hhmm** specifies an hour on the nth occurrence of a weekday in a month. For example, **M10.5.0/0200** means the fifth occurrence of Sunday in the tenth month (October) at 2:00 a.m. • **MMddhhmm** specifies a month, day, hour, and minute. For example, **10310200** means October 31 at 2:00 a.m.

Variable	Value
name <tz>	Configures an abbreviated name for the local time zone name. **tz** is the name. For example, PST is Pacific Standard Time. To configure this option to the default value, use the **default** operator with the command.
offset-from-utc <minutes>	Configures the time zone offset in minutes to subtract from Universal Coordinated Time (UTC), where positive numbers mean west of Greenwich and negative numbers mean east of Greenwich. To configure this option to the default value, use the **default** operator with the command.

Configuring the date

Configure the calendar time in the form of month, day, year, hour, minute, and second.

Prerequisites

- You must log on to the Privileged EXEC mode in the NNCLI.

Procedure steps

Action

Configure the date by using the following command:

```
clock set <MMddyyyyhhmmss>
```

Specifying the primary SF/CPU

Specify the primary SF/CPU to determine which SF/CPU you use as the master after the switch performs a full power cycle only. When the SF/CPU becomes the primary, the master LED for the SF/CPU is on.

Prerequisites

- You must log on to at least Privileged EXEC mode to use the show command.
- You must log on to the Global Configuration mode in the NNCLI to use the configuration command in this procedure.

Procedure steps

Step	Action
1	View the current setting for the primary SF/CPU by using the following command: **show boot config master**
2	Specify the slot of the primary SF/CPU by using the following command: **boot config master <cpu-slot>**
3	Save the configuration to the boot.cfg and pcmboot.cfg files.
4	Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **boot config master** command.

Variable	Value
<cpu-slot>	Specifies the slot number for the primary SF/CPU. This variable can be 5 or 6. The default primary is slot 5.

Changing passwords

Configure new passwords for each access level, or change the logon or password for the different access levels of the switch. After you receive the Nortel Ethernet Routing Switch 8600, use default passwords to initially access the NNCLI. If you use Simple Network Management Protocol version 3 (SNMPv3), you can change encrypted passwords.

Prerequisites

- You must use an account with read/write/all privileges to change passwords. For security, the switch saves passwords to a hidden file.
- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Change a password by using the following command: **cli password <word> <access-level>**

2 Configure password options by using the following command:

```
password [access-level <word>] [aging-time day <1-365>]
[default-lockout-time <60-65000>] [lockout <word> time
<time>] [min-passwd-len <10-20>] [password-history
<3-32>]
```

--End--

Variable definitions

Use the data in the following table to use the password commands.

Variable	Value
`access level <word>`	Permits or blocks this access level. The available access level values are: • l4admin • l4oper • layer1 <word> • layer2 • layer3 <word> • oper • read-only <word> • read-write <word> • read-write-all <word> • slbadmin • slboper • ssladmin **`<word>`** represents the new password with 0–20 characters. For information about the Web Switching Module (WSM), see *Nortel Ethernet Routing Switch 8600 Web Switching Module Fundamentals, NN46205-314*.
`aging-time day <1-365>`	Configures the expiration period for passwords in days, from 1–365.

Variable	Value
`default-lockout-time <60-65000>`	Changes the default lockout time after three invalid attempts. Configures the lockout time, in seconds, and is in the 60–65000 range. The default is 60 seconds. To configure this option to the default value, use the **`default`** operator with the command.
`lockout <word> time <time>`	Configures the host lockout time. • **`word`** is the host IP address in the format a.b.c.d. • **`time`** is the lockout-out time, in seconds, in the 60–65000 range. The default is 60 seconds.
`min-passwd-len <10-20>`	Configures the minimum length for passwords in high-secure mode. To configure this option to the default value, use the **`default`** operator with the command.
`password-history <3-32>`	Specifies the number of previous passwords the switch stores. You cannot reuse a password that is stored in the password history. The default is 3. To configure this option to the default value, use the **`default`** operator with the command.

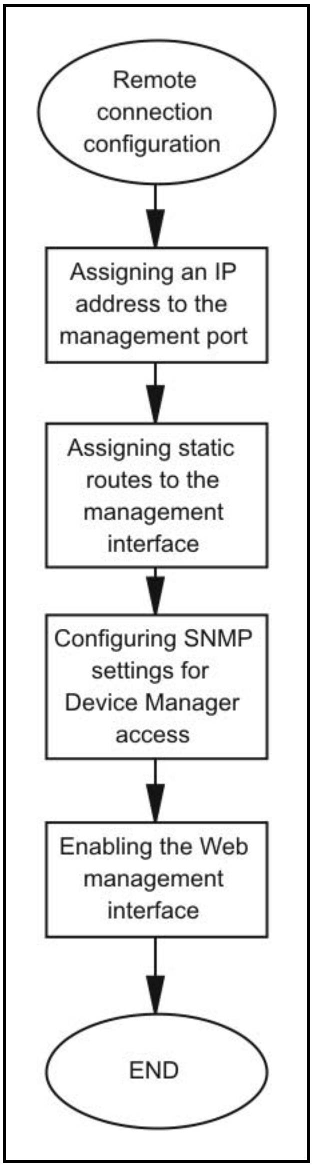
Remote connection configuration using Device Manager

This section contains the minimum information required to configure a management interface for the purposes of setting up a remote connection.

Remote connection configuration procedures

The following task flow shows the sequence of procedures you perform to permit remote connections to the Nortel Ethernet Routing Switch 8600. To link to a procedure, click on the procedure title in "Remote connection configuration navigation" (page 96).

Figure 10
Remote connection configuration procedures


Remote connection configuration
Assigning an IP address to the management port
Assigning static routes to the management interface
Configuring SNMP settings for Device Manager access
Enabling the Web management interface
END

Remote connection configuration navigation

- "Assigning an IP address to the management port" (page 97)
- "Assigning static routes to the management interface" (page 97)
- "Configuring SNMP settings for Device Manager access" (page 99)
- "Enabling the Web management interface" (page 101)

Assigning an IP address to the management port

Assign an IP address to the management port to use it for out-of-band (OOB) management. The standby IP must be in the same subnet as the master IP. Create a virtual management port in addition to the physical management ports on the switch management modules.

Procedure steps

Step	Action
1	In the main Device Manager window, select the management port.
2	From the Device Manager toolbar, select **Edit**, **Mgmt Port**. The Mgmt Port dialog box appears with the Mgmt Port-IP tab displayed.
3	In the **Addr** box, type the required IP address for the management port.
4	In the **Mask** box, type the subnet mask.
5	Click **Apply**.
6	Click **Close**.
7	From the Device Manager toolbar, select **Edit, Chassis**. The Chassis dialog box appears with the System tab displayed.
8	In the **VirtualIPAddr** box, enter the IP address you want to configure as the virtual address.
9	In the **VirtualNetMask** box, enter the subnet mask.
10	Click **Apply**.

--End--

Assigning static routes to the management interface

Assign a static route to specify a gateway address route for the management interface. You can specify up to four static routes for the management interface.

Procedure steps

Step	Action
1	From the Device Manager menu bar, choose **IP**, **IP - GlobalRouter (vrf 0)...** The IP dialog box appears with the Globals tab displayed.
2	Click **Static Routes** .

The Static Routes tab appears.

3 Click **Insert**.

The Insert Static Routes dialog box appears.

4 Select the owner virtual router and forwarder (VRF).

5 In the **Dest** box, type the IP address.

6 In the **Mask** box, type the mask.

7 In the **NextHop** box, type the IP address of the router through which you access the specified route.

8 Select the next hop VRF ID if configuring an interVRF static route.

9 In the **Metric** box, type the HopOrMetric value.

10 In the **Preference** box, select the route preference.

11 Select **Enable**.

12 Select the **LocalNextHop** option if creating Layer 3 static routes.

13 Click **Insert**.

The new route appears in the Static Routes tab

--End--

Variable definitions

Use the data in the following table to configure the Insert Static Routes dialog box.

Variable	Value
OwnerVrfId	Configures the owner VRF ID of the static route.
Dest	Configures the destination IP address of this route. An entry with a value of 0.0.0.0 is the default route. Multiple routes to a single destination can appear in the table, but access to such multiple entries depends on the network management protocol table access mechanisms.
Mask	Is route network mask with the destination address before the switch compares the mask to the value in the Dest box.

Variable	Value
NextHop	Configures the IP address of the next hop of this route. In the case of a route bound to an interface realized through a broadcast media, the value of this box is the agent IP address on that interface.
NextHopVrfId	Indicates the next hop VRF ID in interVRF static-route configuration.
Enable	Initializes the static route.
Metric	Configures the primary routing metric for this route.
Preference	Indicates the route preference of this entry. If you can use more than one route to forward IP traffic, the switch uses the route with the highest preference. The higher the number, the higher the preference.
LocalNextHop	If you select this variable, this box indicates the static route is active only if you configure the switch with a local route to the network. If you do not select this variable, this box indicates the static route is active if you configure the switch with a local route or dynamic route.

Configuring SNMP settings for Device Manager access

Use this procedure to configure important communication parameters such as the polling interval, timeout, and retry count. You can configure these parameters before or after you open a device.

Device Manager automatically determines the software version of the device you select.

Procedure steps

Step	Action
1	From the initial Device Manager window menu bar, select **Device**, **Properties**, **Devices**. A list of IP addresses for configured devices appears.
2	Select the IP address for the device you want to edit.
3	Click **Edit**. The Device Manager Properties dialog box appears.

4 Select the properties you want to change and configure their values.

5 Click **OK**.

--End--

Variable definitions

Use the data in the following table to configure the Properties dialog box.

Variable	Value
Status Interval	Interval you use to gather statistics and status information (default is 20 seconds).
(IfTraps, Status Interval)	The interval, in seconds, you use to gather statistics and status information. Configure this value if you select the Register for Traps box.
Hotswap Detect every	The number of intervals at which Device Manager checks for module hot swaps.
Enable	If you select this variable, Device Manager polls the switch according to the settings you select prior to the Enable box.
Retry Count	If Device Manager cannot transmit polling information at start up, the number of times Device Manager retransmits polling information.
Timeout	Length of the retry for each polling waiting period. If you access the device through a slow link, you can increase the timeout interval and change the retransmission strategy to superlinear.
Trace	If you select this variable, you can perform trace routes.
Register for Traps	If you select this variable, Device Manager registers a trap.
Listen for Traps	If you select this variable, Device Manager monitors for a trap.
Max Traps in Log	The specified number of traps that can exist in the trap log. The default is 500.

Variable	Value
Trap Port	The number of the port where the switch captures trap messages. The default is 162.
Listen for Syslogs	If you select this variable, Device Manager monitors for syslogs.
Confirm row deletion	If you select this variable, Device Manager sends a message after you delete a system table row.
Default Read Community	The default Read Community type.
Default Write Community	The default Write Community type.

Enabling the Web management interface

Start the Web management interface to provide management access to the switch using a Web browser.

Procedure steps

Step	Action
1	From the Device Manager menu bar, select **Edit**, **Chassis**. The Chassis dialog box appears with the System tab displayed.
2	Click **System Flags**.
3	Select the **EnableWebServer** box.
4	Click **Apply**.
5	Click **Close**.
6	From the Device Manager menu bar, select **Security**, **Control Path**, **General**.
7	Click **Web**.
8	Complete the **ROUserName** and **ROPassword** fields to specify the user name and password for access to the Web interface. All Web pages are read-only pages. You use the other fields to specify the path and file name for the Web Help files and to assign the number of rows in the Web display.

--End--

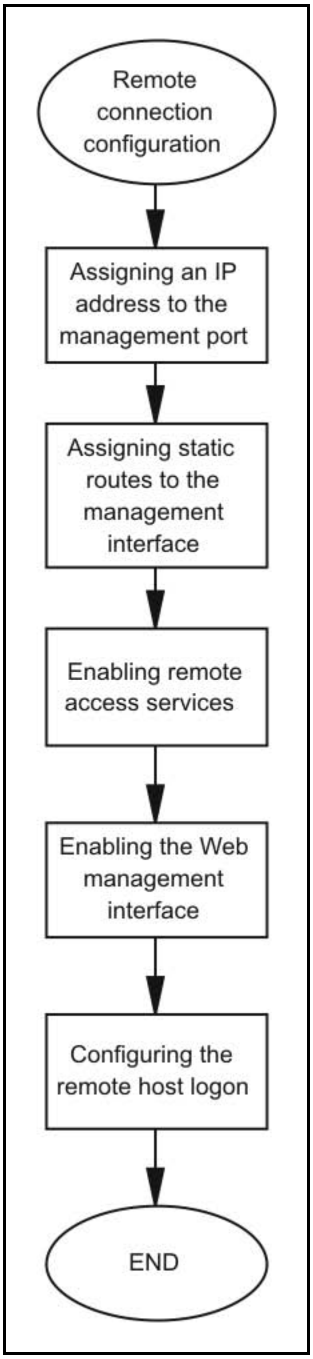
Remote connection configuration using the CLI

This section contains the minimum information required to configure a management interface to set up a remote connection.

Remote connection configuration procedures

The following task flow shows the sequence of procedures you perform to permit remote connections to the Nortel Ethernet Routing Switch 8600. To link to a procedure, click the procedure title in "Remote connection configuration navigation" (page 104).

Figure 11
Remote connection configuration procedures


Remote connection configuration
Assigning an IP address to the management port
Assigning static routes to the management interface
Enabling remote access services
Enabling the Web management interface
Configuring the remote host logon
END

Remote connection configuration navigation

- “Job aid: Roadmap of remote connection CLI commands” (page 105)
- “Assigning an IP address to the management port” (page 106)

- “Assigning static routes to the management interface” (page 107)
- “Enabling remote access services” (page 108)
- “Enabling the Web management interface” (page 109)
- “Configuring the remote host logon” (page 110)

Job aid: Roadmap of remote connection CLI commands

The following table lists the commands and the parameters you use to complete the procedures in this section.

Table 14
Job aid: Roadmap of remote connection CLI commands

Command	Parameter
config bootconfig flags	**ftpd <true|false>**
	rlogind <true|false>
	sshd <true|false>
	telnetd <true|false>
	tftpd <true|false>
config bootconfig host	**ftp-debug <true|false>**
	info
	password <value>
	tftp-debug <true|false>
	tftp-hash <true|false>
	tftp-rexmit <seconds>
	tftp-timeout <seconds>
	user <value>
config bootconfig net mgmt ip <ipaddr/mask>	**cpu-slot <value>**
config bootconfig net mgmt route add <netaddr/mask> <gateway>	
config sys set mgmt-virtual-ip <ipaddr/mask>	

Table 14
Job aid: Roadmap of remote connection CLI commands (cont'd.)

Command	Parameter
`config web-server`	`enable`
	`password <ro> <username> <password>`
`flags`	`ftpd <true|false>`
	`rlogind <true|false>`
	`sshd <true|false>`
	`telnetd <true|false>`
	`tftpd <true|false>`

Assigning an IP address to the management port

Assign an IP address to the management port to use it for out-of-band (OOB) management. The standby IP must be in the same subnet as the master IP. Create a virtual management port in addition to the physical management ports on the switch management modules.

ATTENTION
The virtual IP address feature is not supported in a switch with mixed Nortel Ethernet Routing Switch 8600 8190SM modules and 8691SF/CPU modules.

Procedure steps

Step	Action
1	Assign an IP address to the management port by using the following command: `config bootconfig net mgmt ip <ipaddr/mask> [cpu-slot <value>]`
2	Assign an IP address to a virtual management port by using the following command: `config sys set mgmt-virtual-ip <ipaddr/mask>`
3	Save the changes to the boot.cfg and config.cfg files.

--End--

Variable definitions

Use the data in the following table to use the **`config bootconfig net mgmt ip`** and **`config sys set mgmt-virtual-ip`** commands.

Variable	Value
`cpu-slot <value>`	Specifies the Switch Fabric/Central Processor Unit (SF/CPU) module (8691SF/CPU or 8692SF/CPU), slot 5 or slot 6. If you do not specify a slot number for the IP address, the switch assigns the slot number to the currently active management module.
`ipaddr/mask`	Specifies the IP address and subnet mask of the management port (for example, 10.127.231.15/255.255.255.0). You cannot assign an address of 0.0.0.0/0.

Assigning static routes to the management interface

Assign a static route to specify a gateway address route for the management interface. You can specify up to four static routes for the management interface. For more information about static routes, see *Nortel Ethernet Routing Switch 8600 Configuration — IP Routing, NN46205-523*.

Procedure steps

Step	Action
1	Specify a gateway address route by using the following command: **`config bootconfig net mgmt route add <netaddr/mask> <gateway>`**
2	Save the changes to the boot.cfg and config.cfg files.

--End--

Variable definitions

Use the data in the following table to use the **`config bootconfig net mgmt route add`** command.

Variable	Value
`gateway`	Configures the IP address of the default gateway.
`netaddr/mask`	Configures the IP address and mask of the destination network in the formats a.b.c.d/x | a.b.c.d/x.x.x.x | default.

Example of assigning a static route to the management interface

Procedure steps

Action

If you locate a management station on the network of 11.0.0.0/255.0.0.0, and the next hop to that network from the management interface is 10.127.231.1, enter the following command to configure the management port:

```
config bootconfig net mgmt route add 11.0.0.0/255.0.0.0
10.127.231.1
```

The value 11.0.0.0/255.0.0.0 represents the target subnet; the value 10.127.231.1 represents the gateway you use to point to the target subnet.

ATTENTION
The **`config bootconfig net mgmt route add`** command uses the natural mask of the target subnet. Therefore, in the preceding example, what you implement is the command:**`config bootconfig net mgmt route add 13.0.0.0 10.125.2.1`**. Additionally, this route does not appear in the routing table of the Nortel Ethernet Routing Switch 8600. If you configure a 13.x.x.x network for output using the I/O modules, the switch can experience connectivity issues.

Enabling remote access services

Enable the remote access service to provide multiple methods of remote access.

Prerequisites

- When you enable an rlogin flag, you must configure an access policy and specify the user name of who can access the switch. For more information about the access policy commands, see *Nortel Ethernet Routing Switch 8600 Security, NN46205-601*.

Procedure steps

Step	Action
1	Enable or disable the access service, in the run-time CLI, by using the following command: **`config bootconfig flags <access-service> <true|false>`**
2	Save the configuration.
3	From the boot-monitor CLI, while the switch is booting, press any key to interrupt the autoboot process.

4 Enable or disable the access service by using the following command:

```
flags <access-service> <true|false>
```

5 Save the boot configuration.

--End--

Variable definitions

Use the data in the following table to use the **`flags`** command.

Variable	Value
`access-service`	Specifies the type of remote access service as one of the following: • ftpd • rlogind • telnetd • tftpd • sshd
`true|false`	True enables the service. False disables the service.

Enabling the Web management interface

Start the Web management interface to provide management access to the switch using a Web browser. For details about configuring the Web management interface, see *Nortel Ethernet Routing Switch User Interface Fundamentals, NN46205-308*.

Procedure steps

Step	Action
1	Enable the Web server by using the following command: **`config web-server enable`**
2	Configure the access password by using the following command: **`config web-server password <ro> <username> <password>`**

--End--

Variable definitions

Use the data in the following table to use the **`config web-server`** command.

Variable	Value
`enable`	Enables the Ethernet Routing Switch Web interface.
`password <ro> <username> <password>`	Configures passwords for access to the Web interface. **`username`** is the user logon name (up to 20 characters). **`password`** is the password associated with the logon name (up to 20 characters).

Configuring the remote host logon

Configure the remote host logon to modify parameters for FTP and TFTP access. Use the default parameters for TFTP transfers. If you want to use FTP as the transfer mechanism, you need to change the password to a valid value.

Procedure steps

Step	Action
1	Define conditions for the remote host logon by using the following command: **`config bootconfig host`**
2	Save the changed configuration to the boot.cfg and pcmboot.cfg files.
3	Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`config bootconfig host`** command.

Variable	Value
`ftp-debug <true|false>`	Enables or disables debug mode on FTP. If you enable debug mode, debug messages appear on the management console screen. The default is false.
`info`	Displays the current remote host logon settings.

Variable	Value
password <value>	Configures the password to enable FTP transfers. **value** is the password, up to 16 characters long. After you configure this password, only FTP is used for remote host logon. **ATTENTION** This password must match the password for the FTP server, or the FTP operation fails. Also, if you configure the password to a valid value, then all copying to and from the network uses FTP instead of TFTP. If the user name or password is incorrect, copying over the network fails.
tftp-debug <true|false>	Enables or disables debug mode on TFTP/TFTPD. If you enable debug mode, debug messages appear on the management console screen. The default is false.
tftp-hash <true|false>	Enables or disables the TFTP hash bucket display. The default is false.
tftp-rexmit <seconds>	Configures the TFTP retransmission timeout. The default value is 2 seconds. **seconds** is the number of seconds (1–2147483647).
tftp-timeout <seconds>	Configures the TFTP timeout. The default value is 6 seconds. **seconds** is the number of seconds (1–120).
user <value>	Configures the remote user logon. **value** is the user logon name (up to 16 characters).

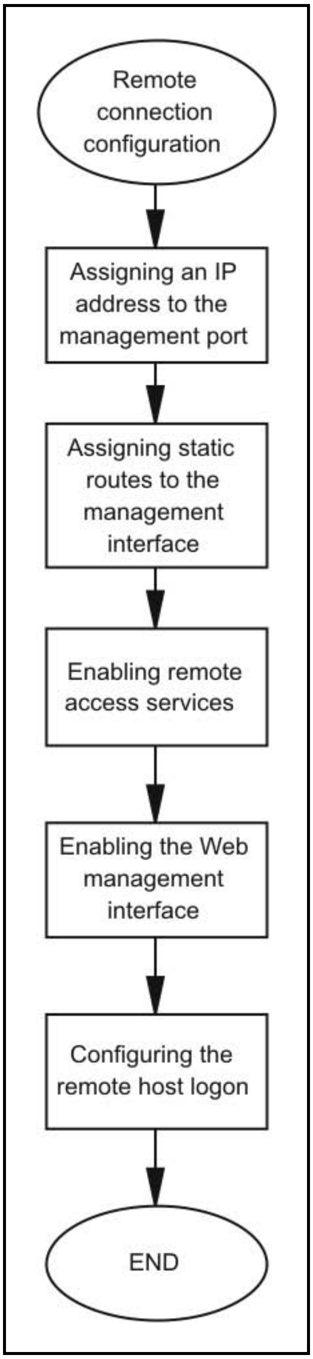
Remote connection configuration using the NNCLI

This section contains the minimum information to configure a management interface to set up a remote connection.

Remote connection configuration procedures

The following task flow shows the sequence of procedures you perform to permit remote connections to the Nortel Ethernet Routing Switch 8600. To link to a procedure, click the procedure title in “Remote connection configuration navigation” (page 114).

Figure 12
Remote connection configuration procedures


Remote connection configuration
Assigning an IP address to the management port
Assigning static routes to the management interface
Enabling remote access services
Enabling the Web management interface
Configuring the remote host logon
END

Remote connection configuration navigation

- “Job aid: Roadmap of remote connection NNCLI commands” (page 115)
- “Assigning an IP address to the management port” (page 116)

- “Assigning static routes to the management interface” (page 117)
- “Enabling remote access services” (page 118)
- “Enabling the Web management interface ” (page 119)
- “Configuring the remote host logon” (page 120)

Job aid: Roadmap of remote connection NNCLI commands

The following table lists the commands and the parameters you use to complete the procedures in this section. The last two columns indicate which commands support the no and default forms of the command.

Table 15
Job aid: Roadmap of remote connection NNCLI commands

Command	Parameter
Global Configuration mode	
boot config flags	**ftpd**
	rlogind
	sshd
	telnetd
	tftpd
boot config host	**ftp-debug**
	password <value>
	tftp-debug
	tftp-hash
	tftp-rexmit <seconds>
	tftp-timeout <seconds>
	user <value>
boot config net mgmt ip <ipaddr> <mask>	**<value>**
boot config net mgmt route <netaddr/mask> <gateway>	
sys mgmt-virtual-ip <ipaddr/mask>	

Table 15
Job aid: Roadmap of remote connection NNCLI commands (cont'd.)

Command	Parameter
`web-server`	`enable`
	`password <rwa/rw/ro> <username> <passwd>`
	`enable`
	`help-tftp <WORD 0-256> http-port <1-49151>`
	`http-port <1-49151>`

Assigning an IP address to the management port

Assign an IP address to the management port to use it for out-of-band (OOB) management. The standby IP must be in the same subnet as the master IP. Create a virtual management port in addition to the physical management ports on the switch management modules.

ATTENTION
The virtual IP address feature is not supported in a switch with mixed Nortel Ethernet Routing Switch 8600 8190SM modules and 8691SF/CPU modules.

Prerequisites

- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Assign an IP address to the management port by using the following command: **`boot config net mgmt ip <ipaddr> <mask> <value>`**
2	Assign an IP address to a virtual management port by using the following command: **`sys mgmt-virtual-ip <ipaddr/mask>`**
3	Save the changes to the boot.cfg and config.cfg files.

--End--

Variable definitions

Use the data in the following table to use the **`boot config net mgmt ip`** and **`sys mgmt-virtual-ip`** commands.

Variable	Value
`cpu-slot <value>`	Specifies the Switch Fabric/Central Processor Unit (SF/CPU) module (8691SF/CPU or 8692SF/CPU), slot 5 or slot 6. If you do not specify a slot number for the IP address, the switch assigns the slot number to the currently active management module.
`<ipaddr> <mask>`	Specifies the IP address and subnet mask of the management port (for example, 10.127.231.15 255.255.255.0). **ATTENTION** You cannot assign an address of 0.0.0.0/0.

Assigning static routes to the management interface

Assign a static route to specify a gateway address route for the management interface. You can specify up to four static routes for the management interface. For more information about static routes, see *Nortel Ethernet Routing Switch 8600 Configuration — OSPF and RIP, NN46205-522*.

Prerequisites

- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Specify a gateway address route by using the following command: **`boot config net mgmt route <netaddr/mask> <gateway>`**
2	Save the changes to the boot.cfg and config.cfg files.

--End--

Variable definitions

Use the data in the following table to use the **`boot config net mgmt route`** command.

Variable	Value
`gateway`	Configures the IP address of the default gateway.
`netaddr/mask`	Configures the IP address and mask of the destination network in the formats a.b.c.d/x | a.b.c.d/x.x.x.x | default.

Example of assigning a static route to the management interface

Procedure steps

Action

If you locate a management station on the network of 11.0.0.0/255.0.0.0, and the next hop to that network from the management interface is 10.127.231.1, enter the following command to configure the management port:

```
ERS-8606:5(config)#boot config net mgmt route
11.0.0.0/255.0.0.0 10.127.231.1
```

The value 11.0.0.0/255.0.0.0 represents the target subnet; the value 10.127.231.1 represents the gateway used to point to the target subnet.

> **ATTENTION**
> The **`config net mgmt route`** command uses the natural mask of the target subnet. Therefore, in the preceding example, what you implement is the command:**`config net mgmt route 13.0.0.0 10.125.2.1`**. Additionally, this route does not appear in the routing table of the Nortel Ethernet Routing Switch 8600. If you configure a 13.x.x.x network for output using the I/O modules, the switch can experience connectivity issues.

Enabling remote access services

Enable the remote access service to provide multiple methods of remote access.

Prerequisites

- When you enable an rlogin flag, you must configure an access policy to specify the user name of who can access the switch. For more information about the access policy commands, see *Nortel Ethernet Routing Switch 8600 Security, NN46205-601*.
- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Enable the access service by using the following command: **`boot config flags <access-service>`** See the following variable definitions table for more information.
2	Save the boot configuration.

--End--

Variable definitions

Use the data in the following table to use the **`boot config flags`** command.

Variable	Value
`access-service`	Specifies one of the following remote-access service types to enable: • ftpd • rlogind • sshd • telnetd • tftpd Use the **no** operator to remove this configuration. To configure this option to the default value, use the **`default`** operator with the command.

Enabling the Web management interface

Enable the Web management interface to provide management access to the switch using a Web browser.

Prerequisites

- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step	Action
1	Enable the Web server by using the following command:

```
web-server enable
```

2 Configure the access password by using the following command:

```
web-server password <ro> <username> <passwd>
```

--End--

Variable definitions

Use the data in the following table to use the **web-server** command.

Variable	Value
def-display-rows	Sets web server default display row width.
enable	Enables the Web interface.
help-tftp	Sets web server HTML directories.
http-port	Sets web server HTTP port.
password	Sets web server password.

Configuring the remote host logon

Configure the remote host logon to modify parameters for FTP and TFTP access. Use the default parameters for TFTP transfers. If you want to use FTP as the transfer mechanism, you must change the password to a valid value.

Prerequisites

- You must log on to the Global Configuration mode in the NNCLI.

Procedure steps

Step **Action**

1 Define conditions for the remote host logon by using the following command:

```
boot config host
```

2 Save the changed configuration to the boot.cfg and pcmboot.cfg files.

3 Reboot the switch.

--End--

Variable definitions

Use the data in the following table to use the **`boot config host`** command.

Variable	Value
`ftp-debug`	Enables or disables debug mode on FTP. If you enable debug mode, debug messages appear on the management console screen. The default is disabled. Use the **no** operator to later remove this configuration. To configure this option to the default value, use the **`default`** operator with the command.
`password <value>`	Configures the password to enable FTP transfers. **`value`** is the password, up to 16 characters long. After you configure this password, only FTP is used for remote host logon **ATTENTION** This password must match the password for the FTP server, or the FTP operation fails. Also, if you configure the password to a valid value, then all copying to and from the network uses FTP instead of TFTP. If the user name or password is incorrect, copying over the network fails.
`tftp-debug`	Enables or disables debug mode on TFTP/TFTPD. If you enable debug mode, debug messages display on the management console screen. The default is disabled. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **`default`** operator with the command.
`tftp-hash`	Enables or disables the TFTP hash bucket display. The default is disabled. Use the **no** operator to remove this configuration. To configure this option to the default value, use the **`default`** operator with the command.
`tftp-rexmit <seconds>`	Configures the TFTP retransmission timeout. The default value is 2 seconds. **`seconds`** is the number of seconds (1–120). To configure this option to the default value, use the **`default`** operator with the command.

Variable	Value
`tftp-timeout <seconds>`	Configures the TFTP timeout. The default value is 6 seconds. **`seconds`** is the number of seconds (1–120). To configure this option to the default value, use the **`default`** operator with the command.
`user <value>`	Configures the remote user logon. **`value`** is the user logon name (up to 16 characters). To configure this option to the default value, use the **`default`** operator with the command.

Commissioning verification

This section contains information about how to verify your commissioning procedures result in a functional switch.

Commissioning verification navigation

- "Pinging an IP device" (page 123)
- "Using Telnet to log on to the device" (page 124)
- "Accessing the switch through the Web interface" (page 124)

Pinging an IP device

Ping a device to test the connection between the Nortel Ethernet Routing Switch 8600 and another network device. After you ping a device, the switch sends an Internet Control Message Protocol (ICMP) packet to the target device. If the device receives the packet, it sends a ping reply. After the switch receives the reply, a message appears indicating you can reach the specified IP address. If the switch does not receive a reply, the message indicates the address is not responding.

Procedure steps

Action

Ping an IP network connection by using the following command:

```
ping <HostName/ipv4address/ipv6address> [scopeid
<value>] [datasize <value>] [count <value>][-s] [-I
<value>] [-t <value>] [-d] [vrf <value>]
```

Variable definitions

Use the data in the following table to use the **ping** command.

Variable	Value
`count value`	Specifies the number of times to ping (for IPv4) (1–9999).

Variable	Value
`-d`	Configures ping debug mode (for IPv4).
`datasize value`	Specifies the size of ping data sent in bytes (for IPv4) (16–4076).
`HostName/ipv4address/ipv6address`	Specifies the host name or IPv4 (a.b.c.d) or IPv6 (x:x:x:x:x:x:x:x) address (string length 1–256).
`-I`	Specifies the interval between transmissions in seconds (1–60).
`-s`	Configures the continuous ping at the interval rate defined by the **`[-I]`** parameter (for IPv4).
`scopeid value`	Specifies the circuit ID (for IPv6) (1–9999).
`-t`	Specifies the no-answer timeout value in seconds (1–120) for IPv4.
`vrf <value>`	Specifies the virtual router and forwarder (VRF) name from 1–16 characters.

Using Telnet to log on to the device

Use Telnet to log on to the device and remotely manage the switch.

Procedure steps

Step	Action
1	From a PC or terminal, start a Telnet session by using the following command: **`telnet <ipv4 or ipv6 address>`**
2	Enter the logon and password when prompted.

--End--

Accessing the switch through the Web interface

Monitor the switch through a Web browser from anywhere on your network. The Web interface uses a 15-minute timeout period. If no activity occurs for 15 minutes, the system logs off the switch Web interface, and you must re-enter the password information.

Procedure steps

Step	Action
1	Start your Web browser.
2	Type the switch IP address as the URL in the Web address field.
	The Web logon page appears.
3	In the User Name and Password boxes, type **`ro`**.
4	Click **Log On**.
	The System page appears. This page provides general information about the switch and its configuration parameters.

--End--

Common procedures using Device Manager

The following section describes common procedures you use while commissioning the Nortel Ethernet Routing Switch 8600.

Common procedure navigation

- "Saving the configuration" (page 127)

Saving the configuration

After you change the boot configuration, you must save the changes to both the master and the standby management modules. Save the configuration to a file to retain the configuration settings.

Procedure steps

Step	Action
1	From the main Device Manager window, select **Actions**, **Save Boot Config** to save the boot configuration.
2	From the main Device Manager window, select **Actions**, **Save Runtime Config** to save the current configuration.

--End--

Common procedures using the CLI

The following section describes common procedures you use while commissioning the Nortel Ethernet Routing Switch 8600.

Common procedure navigation

- “Saving the configuration” (page 129)

Saving the configuration

After you change the boot configuration, you must save the changes to both the master and the standby management modules. Save the configuration to a file to retain the configuration settings.

Procedure steps

Action

Save to configuration by using the following command:

```
save <savetype> [file <value>] [verbose] [standby
<value>] [backup <value>] [mode <cli|nncli>]
```

Variable definitions

Use the data in the following table to use the **save** command.

Variable	Value
backup **<value>**	Saves the specified file name and identifies the file as a backup file. **value** uses one of the following formats: • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.

Variable	Value
file **<value>**	Specifies the file name in one of the following formats for **value**: • [a.b.c.d]: <file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
mode <cli|nncli>	Saves the configuration as CLI or NNCLI.
savetype	Specifies what information to save. Possible values for this parameter are: • config • bootconfig • log • trace • clilog • snmplog
standby **<value>**	Saves the specified file name to the standby SF/CPU in the following format for **value**: • filename, /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change.

Common procedures using the NNCLI

The following section describes common procedures you use while commissioning the Nortel Ethernet Routing Switch 8600.

Common procedure navigation

- “Saving the configuration” (page 131)

Saving the configuration

After you change the boot configuration, you must save the changes to both the master and the standby management modules. Save the configuration to a file to retain the configuration settings.

Prerequisites

- You must log on to the Privileged EXEC mode in the NNCLI.

Procedure steps

Step	Action
1	Save to boot configuration by using the following command: **`save bootconfig [file <word>] [verbose] [standby <word>] [backup <word>] [mode <cli|nncli>]`**
2	Save the running configuration by using the following command: **`save config [file <word>] [verbose] [standby <word>] [backup <word>] [mode (cli|nncli)]`**

--End--

Variable definitions

Use the data in the following table to use the **`save bootconfig`** and **`save config`** commands.

Variable	Value
backup <word>	Saves the specified file name and identifies the file as a backup file. **word** uses one of the following formats: • [a.b.c.d]:<file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
file <word>	Specifies the file name in one of the following formats for **word**: • [a.b.c.d]: <file> • peer/<file> • /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
mode <cli|nncli>	Saves the boot configuration in CLI or NNCLI format.
standby <word>	Saves the specified file name to the standby SF/CPU in the following format for **word**: • filename, /pcmcia/ <file> • /flash/ <file> file is a string of 1–99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change.

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Nortel Ethernet Routing Switch 8600

Commissioning

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